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ABSTRACT

This document is a report of the quantitative trends in teaching staff in higher education in 21 major countries. Part 1 of the study consists of the country studies. Wherever possible teachers were divided into 3 groups according to level: (1) senior level teachers, consisting of ordinary and extraordinary professors; (2) junior level teachers, consisting of assistant lecturers, teaching assistants and auxiliaries, and other university staff of the same level; and (3) middle-level teachers or teachers that come between the 2 groups above, such as lecturers. Further distinctions were made where possible between university and nonuniversity higher education and fields of study. Student-teacher ratios are given in the country studies whenever they are significant, and each country study concludes with a short summary of the essential features relating to that country. Part 2 is a consolidated summary of Part 1, and attempts to make an international comparison to discover features common to all countries and those peculiar to some of them. (HS)

**STUDY ON TEACHERS
QUANTITATIVE TRENDS
IN TEACHING STAFF
IN
HIGHER EDUCATION**

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PART II

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(The countries listed above follow the French alphabetical order).

PREFACE

In preparation for the Conference on Policies for Educational Growth, organised by the OECD in Paris from 3rd to 5th June, 1970, a set of Background Studies was drawn up, dealing with various aspects of the development of education systems over the last ten or fifteen years. The question of the resources, both human and material, allocated to education, and the use made of them, was the subject of a number of Background Studies, one of which dealt more particularly with Teaching Staff and Educational Expansion in OECD Member Countries since 1950.

Data, both quantitative and qualitative, were available for primary and secondary education in the seven volumes of monographs published in 1968 and 1969, in the series of documents Study on Teachers and the consolidated report on the series, Training, Recruitment and Utilisation of Primary and Secondary School Teachers (to be published shortly). On the other hand, no study had been made - even quantitatively - of the recent trend of teaching staff in higher education.

In order to make the Background Study cited above as exhaustive as possible, the Secretariat decided to carry out an ancillary study on Quantitative Trends in Teaching Staff in Higher Education. Following the pattern of the earlier studies on primary and secondary teachers, this survey takes the form of individual country studies, followed by a short consolidated report, but all combined in a single volume. Unlike the studies on primary and secondary school teachers previously published, however, the present study on higher education deals with quantitative trends only and not with qualitative trends.

As will be seen below, nearly all OECD Member countries checked and completed the statistics compiled by the Secretariat. It was in view of the fact that this work, undertaken at international level for the first time, very largely met the same concerns which had led to the publication of the earlier volumes on primary and secondary education, that the Secretariat decided to publish it in the same series. It goes without saying that the reading of this study could very usefully be supplemented, on the quantitative trend of student enrolments, by the Secretariat studies on The Development of Higher Education, 1950-1967, Country Statistics (OECD, Paris, 1970) and on The Development of Higher Education, 1950-1967, Analytical Report (to be published shortly).

This study on Quantitative Trends in Teaching Staff in Higher Education has been compiled by the Secretariat. It has been drafted by Madame Marie-Louise Raassis, Consultant to the Directorate for Scientific Affairs in co-operation with Mr. Pierre Laderrière, of the same Directorate.

FOREWORD

This study of quantitative trends in teaching staff in higher education consists of a series of country studies followed by a consolidated report.

To ensure the maximum precision, the basic statistics were submitted for checking to the authorities of the countries concerned. The country studies were supplemented, and where necessary amended, in the light of answers to a series of "complementary questions" sent out to the national authorities.

To make it easier to assess the significance of changes in numbers of teachers, the corresponding changes in the numbers of students were also studied. The research done consisted, in the main, of the collection of statistics for the period 1950-1965, and a critical examination of the data obtained.

National authorities who checked the
statistical data and submitted replies
to the "complementary questions" sent out
by OECD

Germany	Secretariat of the Standing Conference of Ministers of Education of the Laender of the Federal German Republic.
Austria	Ministry of Education - Department for University Affairs.
Belgium	General Secretariat for Science Policy Programming. Prime Minister's Office.
Canada	National Statistics Office - Education Division.
Denmark	Ministry of Education.
Spain	Ministry of Education and Science.
United States	Institute for International Studies - International Education Service - Department of Health, Education and Welfare.
France	Ministry of Education - General Directorate of Higher Education.
Greece	Social Policies Directorate - General Directorate I - Ministry of Co-ordination.
Italy	Ministry of Education - Scientific Affairs Inspectorate - Higher Education Directorate.
Japan	Ministry of Education - Secretariat - Research Division.
Norway	Ministry of Education and Ecclesiastical Affairs.
Netherlands	Central Bureau of Statistics - Department of Education.
Portugal	Portuguese Delegation to the OECD.
United Kingdom	Great Britain: Department of Education and Science. Northern Ireland: Ministry of Education.
Sweden	Budget and Planning Secretariat - Ministry of Education.
Turkey	Social Planning Department.
Yugoslavia	Federal Council for Education and Culture.

GENERAL INTRODUCTION

The following is a description of the general plan of the study, and the difficulties and limitations encountered in carrying it out.

A. THE PLAN OF THE STUDY

Part I consists of the country studies. Wherever possible teachers were divided into three groups according to level:⁽¹⁾

- senior level teachers (SL), consisting of ordinary and extraordinary professors;⁽²⁾
- junior level teachers (JL): assistant lecturers, teaching assistants and auxiliaries and other university staff of the same level;
- middle level teachers (ML): teachers coming between the two groups above, such as lecturers (*chargés de cours, maîtres de conférence, etc.*).

Where the available statistics allowed, further distinctions were made between university type and non-university type higher education⁽³⁾ on the one hand, and fields of study according to the classification suggested by the OECD in Methods and Statistical Needs for Educational Planning⁽⁴⁾, i.e.:

Pure sciences
Architecture
Technology
Agriculture
Medical sciences
Humanities
Education
Fine arts
Law
Social sciences
Other.

(1) One of the main reference works used was "Structure of University Staff" (Education in Europe, series I, higher education and research, No.3, published by the Council of Europe in 1966).

Other reference works used were the UNESCO study World Survey of Education, Volume IV on higher education; two studies by the IAUPL (International Association of University Professors and Lecturers): The Recruitment and Training of University Teachers (1967, Ghent) and The Status of University Teachers (1961, Ghent); and certain other studies. As will be seen under point B, a classification of this kind is bound to be more or less arbitrary, and inter-country comparisons are made harder by the lack of uniformity in titles, grades and status of university staff in the various faculties in each country.

- (2) The title "professor" is accorded with varying degrees of generosity in different countries. In Sweden, for example, assistant professors are usually teachers with very high qualifications. In some countries the title of honorary professor is conferred in recognition of personal work. Honorary professors are not members of university staffs, but do their work outside the university, although they may give some lectures within the university (see on this point World Survey of Education, UNESCO, Vol.IV, p.192). In this study an attempt has been made to classify teachers according to the actual level of their activities.
- (3) In the following pages the terms "type" and "level" are used neutrally, neither of them implying any qualitative or hierarchical distinction between university and non-university teaching.
- (4) OECD, Paris (1967); the annex to this Introduction sets out the main fields of study adopted by the OECD and followed in this study.

It will be observed that the consolidated report has a much narrower scope because, on the one hand, it excludes some fields of university type study and some non-university level teaching, and, on the other hand, it takes no account of the part played by women teachers and part-time teachers or of additional teaching hours. The data collected can, in fact, be used for certain comparisons over time within individual countries, but are too disparate to be used for inter-country comparisons.

Wherever the data allow, tables of staff and students in the annexes to the country studies give absolute figures, the corresponding indexes of trends and changes in the structure of the teaching body broken down by levels for the period 1950-1966.⁽¹⁾ Significant statistical series covering such a long period were not always obtainable. The great disparities between countries as regards the period for which figures were available made it necessary to take different base years for each country, the base year being always the one at the beginning of the statistical series. As a result, in order to make international comparisons it was necessary to work out average annual growth rates for teaching staff, both overall and by level, and for students. These rates relate to periods which partially overlap between countries, but which as far as possible fall somewhere within the period 1950 to 1965. Student enrolments have been given only when they could be meaningfully compared with the number of teachers. Furthermore, it will be seen in Part II that for some countries it was possible to compare the numerical trends of teachers and students for the period 1950-1965.

Student/teacher ratios for each country are given in the country studies whenever they are significant for the beginning and end of the period studied. For reasons given below, inter-country comparisons of these ratios can be made only with caution, their significance being relatively limited by all the reservations made in (B) below. Nevertheless, in Part II, reference is sometimes made to the quantitative staffing position at the beginning and end of the period so that the trends in numbers of students and teachers which emerge for each country can be related to a starting position which was more or less satisfactory, quantitatively. It is, in fact, possible to compare trends within a country, or even between different countries, on the basis of figures which are, in themselves, rough and ready and not particularly indicative of the situation at a given moment. What is significant in such cases is not the quantitative staffing position in a particular year, but the tendency which emerges for the period studied. Student/teacher ratios are therefore not considered here as an objective measure, but as a means of assessing the trend.

Each country study concludes with a short summary of the essential features relating to that country.

Part II is a consolidated summary of Part I. It is an attempt at an international comparison designed to discover which features are common to all countries and which are peculiar to some of them. But the reservations already made in this Introduction limit the extent to which this can be done, and the conclusions reached have had to be formulated very cautiously. Indeed it often seemed preferable to talk in terms of assumptions and questions rather than conclusions. This is also the reason why some of the aspects dealt with in the country studies have not been included in the consolidated summary, especially

(1) The composition of the teaching body according to the three levels used in this study and their respective qualifications have been described in each of the country studies. These data are given in tabular form in annex to each of the studies. For the sake of brevity, the notes to the tables in annex have usually not been repeated in the text. Nevertheless, wherever it seemed desirable, references are given to sources of additional information necessary to appreciate the argument in the text.

where the information collected relates to only a few countries or is too general in character or too limited in time. As a result, the summary is narrower in scope than the country studies. It deals mainly with the comparative trends in numbers of teachers (at the three levels) and students in university type institutions between 1950 and 1965.

Even though it has not been possible, with the data available, to arrive at firm and really satisfactory conclusions - or perhaps for that very reason - this study is valuable as indicating the still unexplored areas which urgently need investigation and at the same time giving a general view of the state of affairs in OECD Member countries.

B. DIFFICULTIES ENCOUNTERED IN THE STUDY, AND ITS LIMITATIONS

The first difficulty arises out of the inadequacy of the statistical data, the differences in the breakdowns available for teachers and for students, and changes in the statistical approach - the significance of which it is often impossible to assess - which cause artificial breaks in the series. Nevertheless, in several cases where the coverage was less than total it proved possible to make quite representative selections of teachers and students belonging to a large number of establishments. It was thus possible to make meaningful comparisons between the growth of the teaching staff in these establishments and the increase in the numbers of students they were teaching. In addition, the statistical series were abridged, or several distinct periods were chosen, whenever that seemed preferable to incurring the danger of misinterpretation, by formally readjusting the statistics.

Further, since there is no uniformity in higher education systems between countries and sometimes between the universities or higher education establishments within the same country, comparisons are rendered more difficult by the heterogeneous character of what is being compared. Requirements differ from country to country as regards qualifications, past experience in research and teaching, and publications and other personal work necessary for teaching. Whereas in some countries a particular degree or diploma is the sine qua non for membership of the teaching staff or for promotion to a higher level, in other countries no such conditions are imposed.

This brings us to the subject of the differences in the qualifications required for appointment to established posts or for holding certain ranks in the university hierarchy. To minimise the confusion due to these differences, an attempt has been made in Part I to provide at the beginning of each country study a brief description of the regulations and other requirements which teachers must satisfy at the commencement of their academic careers and thereafter for successive promotions up to the level of full professor. The rapid summaries made for this purpose lead us to believe that, in this respect at least, the differences between countries are often more apparent than real, particularly as far as higher level teachers are concerned.

Indeed, it would be wrong to give too much weight to the disparities existing between countries as regards the criteria to be satisfied for starting an academic career, becoming a permanent member of the teaching staff and climbing the successive rungs of the promotion ladder. Generally speaking a doctor's degree is almost always necessary to teach in a faculty other than as an assistant or lower level teacher. In some countries, additional qualifications are required of candidates at various levels. There is, for example, the Habilitation in Germany, Austria and some Swiss cantons.

It should also be noted - and this is a vital point - that the teaching schedule varies considerably both from country to country and from one university to another, and according to the level of teaching. In some countries a teacher is regarded as working full-time if he does three hours of teaching per week, whereas in others he may be expected to do six or eight hours or even more. Furthermore, the total number of lectures given per year by a

full professor is usually much less than that given by a maitre de conférence, a privat-docent or a premier assistant. On the other hand the "quality" of the lectures given by a professor is expected to be higher than those given by assistants.

A further point is that in some countries, especially in the United Kingdom, university teaching staff have additional responsibilities for supervising and advising individual students or groups with whom they have frequent contacts outside the formal courses. This "tutorial" system implies generous staffing ratios and makes considerable demands on teachers' time and energy. It is of no little importance therefore, both from the quantitative and qualitative points of view, to know who teaches what, and what the teaching loads are in each country and at each level of teaching. (1)

Another difficulty is that the statistics provided may include details of part-time teachers and students. It often proved impossible to distinguish between full-time and part-time teachers. In some cases countries provided a weighting coefficient (usually 1/3). To avoid arbitrary interpretations, this coefficient has not been applied to the other countries which made distinctions between full- and part-time teachers but which failed to provide a basis for conversion. In some cases it is difficult to know whether part-time teachers are included or not in the figures provided. In some countries the proportions of part-time teachers in the total teaching body may be negligible, in others, very large. Wherever possible, care has been taken to deal with this point either in the text itself or in footnotes to avoid wearying the reader with too much detail. (2)

For certain countries, either only partial data were available for the broad divisions of subjects taught or the breakdown of teachers by faculty did not lend itself to the classification proposed by OECD. (3) In these cases new aggregates and breakdowns had to be made, which means that the figures for students are not the same as those given in country reports on students as presented by OECD. (4) With different faculty breakdowns it is not surprising that the figures differ.

It also proved impossible in most cases to avoid some double-counting where teachers are teaching in several fields of study at the same time. It is therefore likely that overall numbers of teachers are too high. However, in the countries where it has been possible to correct this, the margin of error caused by double counting proved to be small. It can be assumed that for the other countries where the error could not be identified it was also negligible.

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- (1) In Norway, for example, professors have to give five lectures a week. Nevertheless, if they are also heads of department, their teaching duties are reduced. Until 1963 assistant professors did three hours of lecturing per week, but were expected to devote more time to research. Since 1963, the Senate has given them five hours of teaching per week. At a lower level come the lektors and førsteamanuensis, who have to teach between 8 and 12 hours per week. At the other extreme are the universitets-stipendiat whose main activity is research, and who as a general rule are not called on to lecture for more than two hours a week.
 - (2) In England, and more generally, in the English-speaking countries, the numbers of part-time teachers are very small. In other countries, on the other hand, they can amount to almost 40 per cent of the teaching staff in terms of numbers (there is usually no recognised full-time equivalence).
 - (3) On this point see annex to this Introduction, an abstract from the book published by OECD on this subject: Methods and Statistical Needs for Educational Planning.
 - (4) Development of Higher Education, 1950-1967 - Statistical Survey, OECD, Paris, 1970.

In some countries teachers devote a significant amount of their time to research. It is then usually impossible to tell what part of their activity should be attributed to teaching. It should also be noted that the statistics on teaching staff published in several countries often include persons who take part in university activities without any responsibilities for teaching or for supervising practical training, such as hospital assistants, etc. It has not always been possible to ascertain whether this type of staff was included or not since the figures provided often lacked the detail necessary for any logical deduction on this point. This is one of the reasons for apparent anomalies in estimates based on figures from different sources. Since such staff are often numerous, the resulting disparities were sometimes quite large.

The part played by assistants in teaching and the tutorial supervision of students varies considerably according to the country, the type of establishment, the field of study and the level of requirements year by year. These assistants are not always included in the statistics available. What is more, it is not always clear from the source of documentation whether they are included or not. But the proportion of assistants in the teaching body as a whole is rapidly increasing, sometimes being as high as 50 per cent. That is why a special effort was made to obtain as much additional information as possible in the answers to the "complementary questions" submitted to the countries concerned.⁽¹⁾

Some countries second members of their university staffs to teach abroad (under co-operation agreements, for example). It is difficult to know whether these teachers are included or not in the statistics provided. As a general rule they seem to be excluded from the figures submitted.

Further, it is well known that student/teacher ratios are much less indicative of the size of classes and the actual numbers of students attending lectures in higher education than they are for secondary education and even more for primary education. Average numbers of participants in courses or practical training would certainly have been much more representative. Unfortunately in the majority of cases these were not available or proved impossible to calculate.

The significance of these ratios is moreover linked with the "size" of the school or field of study. Where there are few students, a higher proportion of teachers is required to cover the various subjects taught. Thus the staffing ratios are generally much lower for Agriculture than for the Humanities or the Social Sciences, without necessarily being much more satisfactory in practice if the schools have not reached the optimum size.

International comparisons of numbers of teachers or student/teacher ratios are also limited in significance by all the differences in the regulations relating to courses of study such as the exact duration of the course, whether attendance at lectures or practical training periods is compulsory or voluntary, differences between disciplines or universities in the same country where the universities enjoy a large measure of autonomy, between States or Cantons (for confederations like Switzerland or the United States) and between countries.

Further, this report is written in terms of averages which cover extremely diverse situations. The fact that the weekly hours taught by teachers are much less than the weekly hours of courses attended by students again limits the significance of student/teacher ratios.

All these reservations amply justify the refusal to make hasty comparisons of ratios calculated for the various disciplines within the same country or the same discipline in different countries.

(1) See above in the Foreword under "National authorities who checked the statistical data and submitted answers to the 'complementary questions' sent out by OECD".

It should also be noted that for some countries there are no figures at all for teachers engaged in non-university higher education. Sometimes the distinction between "higher university" and "higher non-university" is not made or does not exist. That is why Part II omits "higher non-university", for which data are scarce at international level.

Finally it must be said that a study dealing only with the quantitative aspect of trends in university staff compared with student enrolments must necessarily be limited in scope and significance.

Indeed, in discussing education, decisions as to what constitute optimum, ideal quantitative ratios between teachers and students are bound to be arbitrary. Similarly, it is difficult if not dangerous to try to interpret figures, and the student/teacher ratios which have been calculated from those figures, without at the same time taking into consideration the qualitative factors which determine the nature and value of the education given.

In approaching the subject of quantitative trends in teaching bodies, the object is therefore to deal with only one aspect of the way in which supply has managed to cope with requirements. The quantitative question, once dealt with, will provide a sounder basis for later qualitative studies since, in this field, quantity and quality are necessarily closely inter-related. In other words, to be more meaningful, the quantitative approach should be accompanied by a qualitative study based on objective facts which will fill in the details of a picture which, based on figures alone, would be too one-sided and simple. Further, it will serve as a warning against the illusion that an exact picture is being presented whereas the underlying reality is much more complex and difficult to grasp.

It must be remembered therefore that this study is subject to two kinds of limitations:

- (a) it is deliberately confined to the quantitative aspects of staffing in higher education;
- (b) the statistical weaknesses, periodic changes in methods of collecting numerical data, ambiguities in definitions of teachers, disparities in teaching schedules, duties and levels, etc. have introduced other limitations - unintentional in these cases - which must also be taken into account, especially in trying to formulate conclusions.

ANNEX TO THE GENERAL INTRODUCTION

List of fields of study distinguished by the OECD:

"Methods and Statistical Needs for Educational Planning"

I. UNIVERSITIES AND EQUIVALENT INSTITUTIONS:

1. Pure sciences:

Astronomy
Bacteriology
Biochemistry
Biology
Botany
Chemistry
Entomology
Geology
Geophysics
Mathematics
Meteorology
Mineralogy
Physics
Zoology
Others

2. Architecture

3. Technology:

Applied sciences
Construction
Geodesy
Metallurgy
Mining
Surveying
Technology
Textile engineering
Others

4. Medical sciences:

Anatomy
Dentistry
Medicine
Midwifery
Nursing
Optometry
Osteopathy
Pharmacy
Physiotherapy
Public health
Surgery
Others

5. Agriculture:

Agricultural economics
Animal husbandry
Crop husbandry
Dairy farming
Fisheries
Food technology
Forestry
Horticulture
Soil and water sciences
Veterinary medicine
Others

6. Humanities:

Archaeology
History
Languages
Library science
Literature
Philosophy
Psychology
Theology
Others

7. Fine arts:

Drawing
Music
Painting
Sculpture
Speech and dramatic art
Others

8. Education:

Education
Pedagogy
Physical education

9. Law

10. Social sciences:

Banking
Commerce
Diplomacy
Economics
Ethnology
Geography
Home economics
International relations
Journalism
Political science
Public administration
Social welfare
Sociology
Statistics
Others

11. Others (n.e.c.)

Total: Universities and equivalent

II. OTHER INSTITUTIONS OF HIGHER EDUCATION:

(same breakdown as above)

Total:

PART I

GERMANY

I. Criteria for the recruitment and promotion of teachers

The training of teachers of university level generally involves the following stages: after university training and a final examination leading to the "Diplom-Prüfung" or "Staatsprüfung" the candidate becomes an assistant in a university for a number of years. During this period he prepares his "Habilitation" which consists of a written dissertation on the research work undertaken and which serves as a basis for judging his capability to continue research work. In addition to the dissertation he must also prepare a lecture, followed by a colloquium which he gives in the presence of a faculty board of examiners. Successful completion of these requirements leads to the "venia legendi", that is, the right to lecture and to direct seminars in the field in which he has obtained his "Habilitation". But a candidate may be appointed professor on the strength of independent high-level research work which does not constitute an Habilitation. This can be the case, for example, in the engineering sciences. The Habilitation is a proof of research-mindedness rather than of teaching ability. However, it is considered that an assistant lecturer's duties promote the development of his teaching proficiency inasmuch as they partly consist of teaching and often bring him into close contact with his students. When a candidate has obtained his "venia legendi" he generally becomes a "privat-docent". He then has the status of a temporary civil servant.

Mobility in German universities is relatively high. However, to enable him to do research in depth the candidate must normally have spent a minimum of three years in a university before being appointed elsewhere. International mobility is not fostered by the rules which at present prevail in Germany. Nevertheless, up to two years' leave of absence may be granted to members of an academic staff when they are appointed to one of the eleven Länder and attached to the Institutes of Research and Higher Education if such leave of absence is considered to be in the country's interest. (1)

II. Trends in the numbers of teachers and students in higher education

A. University education

1. Numbers of teachers and students, and student/teacher ratios

The figures used for this study are shown in tables I and II in the annex. They are taken from the "Statistisches Bundesamt" (2). Apart from the figures submitted for the three years under review no corresponding statistics have been compiled. (3) A breakdown by field of study was made for teachers (table I) and also for students (table II).

(1) Sources: Professor Werner Thieme and Dieter Halcour, The Recruitment and Training of University Teachers; R.H. Shryock, The Status of University Teachers, (IAUPL publications).

(2) Federal Statistical Service of the German Federal Republic.

(3) Answer to the "complementary questions".

The three censuses carried out in 1952, 1960 and 1966 showed the number of full-time university teachers. A number of student/teacher ratios have been worked out from these figures (see table A).

However, in the statistics provided in answer to the "complementary questions", students in West Berlin were always included whereas, for teachers, they were excluded for the years 1952 and 1960. It was therefore necessary to make an adjustment in the overall number of teachers for 1952 by adding to this figure the teachers in West Berlin. Since a breakdown for these teachers by field of study was not available, the adjustment has been made only for the university teaching body as a whole. This yields the following figures.

Table A

Trend in the numbers of university teachers and students between 1952-53 and 1966-67 (a)

	Students	Teachers			
		Senior level	Middle level	Junior level	Total
1952-53	112,990	2,760	4,244	4,501	11,505
1966-67	266,428	4,663	8,307	13,584	26,554
Rate of growth 1952-1966	5.9%	3.8%	4.9%	3.2%	6.1%
Structural changes between 1952 and 1966	-	24% 17.6%	36.9% 31.5%	39. 51.	100% 100%
Student/teacher ratios	Student/ Total	Student/ SL	Student/ ML	Student/ JL	Student/ SL + ML
1952-53	9.8	40.9	26.6	25.1	16.1
1966-67	10	57.1	32.1	19.6	20.5

Note: (a) West Berlin always included.

For breakdowns by field of study, figures for teachers in West Berlin were not supplied for 1966. These teachers therefore could not be deducted from the figures by field of study, although this could be done for students. This leads to an element of distortion in the following data which results in the fact that:

- 1) the student/teacher ratios by field of study seem less favourable than they actually were in 1952 and 1960;
- 2) the growth rate for teachers by field of study seems, on the contrary, to have been much more rapid between 1952 and 1966 than it actually was.

The reader should constantly bear in mind these two very important reservations in studying the following tables and the accompanying commentary. (1)

(1) Particularly, table B.

Table B
Student/teacher ratios in university education in 1952 and 1966

Field of study		S/SL (Students per senior level teacher)	S/ML (Students per middle level teacher)	S/JL (Students per junior level teacher)	S/SL + ML	Students/teacher overall
Pure science	1952	34.8	21.5	21.7	13.3	8.2
	1966	41.4	20.2	13.5	13.6	6.8
Architecture	1952	64.0	77.0	49.7	35.0	20.5
	1966	51.6	37.5	19.8	21.7	10.4
Technology	1952	75.1	56.3	36.1	32.2	17.0
	1966	65.7	41.0	17.9	25.3	10.5
Agriculture	1952	34.0	27.6	21.5	15.2	8.9
	1966	22.0	10.4	7.6	7.1	3.7
Medical sciences	1952	40.9	17.5	8.3	12.3	4.9
	1966	67.3	16.9	9.7	13.5	5.6
Humanities	1952	29.1	48.0	80.9	18.1	14.8
	1966	49.3	40.7	40.8	22.3	14.4
Education	1952	52.4	45.7	36.3	24.4	14.6
	1966	1581.0	50.2	16.6	48.6	37.6
Law	1952	59.2	71.4	123.8	32.4	25.7
	1966	66.8	210.1	52.2	50.7	25.7
Social sciences	1952	95.0	68.6	113.4	39.8	29.5
	1966	96.2	126.5	42.6	54.7	23.9

Table C
Rates of increase by field of study of teachers at all levels
and students of university level in higher education (1952-1966)
(in percentages)

Field of study	Teachers				Students
	SL	ML	JL	Total	
Pure science	4.8	6.4	9.4	7.4	6.0
Architecture	4.2	7.7	9.2	7.5	2.7
Technology	4.6	5.9	8.7	7.1	3.7
Agriculture	4.4	8.2	8.7	7.6	6.8
Medical sciences	3.4	7.1	5.7	5.9	1.4
Humanities	3.8	8.7	12.5	7.7	7.5
Education	-16.0	4.8	-4.7	-0.9	5.5
Law	4.1	-2.3	11.2	4.9	4.9
Social sciences	6.6	2.4	13.8	8.1	6.6

2. Average annual growth rates of university staff and students between 1952 and 1966

For the period 1952-1966, these rates are shown in the aggregate in table A and by field of study in table C.

3. Structural changes in teaching staff

The changes expressed in quantitative terms are shown in table A and in table III in the annex. They show declines in senior level staff in all fields, varying trends for middle level staff (although they declined as a whole between 1952 and 1966) and relative increases in junior level staff in all fields of study except medical sciences and education.

In brief the following points emerged from an analysis of the available figures:

- senior level staff were generally the only ones which increased more slowly than students;
- junior level staff increased more rapidly than the other teachers in all fields (except medical sciences and education) and when considered as a whole;
- the teaching staff considered overall and by field of study (except in education) has increased more rapidly than the students.

B. Non-university higher education

The answers to the "complementary questions" produced various figures relating to teachers and students in non-university institutions of higher education. It was not always possible to distinguish between staff at various levels as in the case of university teaching. The following tables were compiled from the figures submitted.

1. Technical education

The answers to the "complementary questions" gave figures for full-time and part-time staff. These figures were supplemented by student enrolments as they appeared in the special OECD surveys devoted to quantitative trends among students in various countries.⁽¹⁾ Table D was compiled from these basic statistics.

Between 1958 and 1965 the trend in student/teacher ratios was as follows in non-university higher technical schools.

	1958/59	1960/61	1965/66
Students/full-time established teachers	17.4	16.5	14.1
Students/total teaching staff	13.6	12.2	10.0

2. Teacher-training colleges

In teacher training colleges the trend in numbers of teachers and students is shown in table E.

(1) See the sources indicated at the bottom of each table.

Table D

Numbers of non-university type teachers and students in technology from 1955 to 1968

Year	Students		Established full-time teachers of which			Non-established part-time teachers			Total staff Indexes
	Total	Indexes	Total(a)	Indexes	SL(b)	Indexes	Total	Indexes	
1955/56			1,809(c)	80	-	-	601(c)	94	2,567(c) 89
1956/57			1,966(c)	87	-	-	608	95	2,763 95
1957/58			2,155	96	-	-	639	100	2,893 100
1958/59	39,290	100	2,254	100	1,626	100	699	109	3,103 107
1959/60	41,697	106	2,404	107	1,709	105	910	142	3,489 121
1960/61	42,440	108	2,579	114	-	-	926	145	3,697 128
1961/62	47,319	120	2,771	123	2,023	124	1,037	162	4,143 143
1962/63	51,166	130	3,106	138	2,248	138	1,266	198	4,655 161
1963/64	54,118	138	3,389	150	2,416	149	1,487	233	5,358 184
1964/65	58,567	149	3,851	171	2,640	162	-	271	6,044 209
1965/66	60,616	154	4,314	191	-	-	-	-	-
1966/67			4,779	212					
1967/68			4,868	217					
Average annual rates of growth (1958-65)	6.4%	9.7%	(1958-64)	8.4%	(1958-64)	15.3%	(1958-64)	11.1%	

Source: Federal Bureau of Statistics and Ministries of Education.
Development of Higher Education, 1950-1967 - Statistical Survey, OECD, 1970 (Germany).

Notes: (a) 1964/65 - 1967/68 including assistant lecturers (1965/66 = 503).

(b) Holders of a university degree (Engineering graduates).

(c) Excluding the Saar.

Table F

Teacher training staff in non-university type institutions of higher education
 (Padagogische Hochschulen)

Year	Students (a)			Established full-time teachers			Student/teacher ratios	
	I		II		III		I/II	I/III
	Absolute figures	Indexes	Absolute figures	Indexes	Absolute figures	Indexes		
1964	45,480	100	2,753	100	1,901	100	16.5	23.9
1965	45,182	99	3,041	110	2,044	108	14.9	22.1
1966	53,385	119	3,086	112	2,062	108	17.5	26.2
1967	58,544	129	3,222	117	2,145	113	18.2	27.3
1968	-		3,331	121	2,160	114		
Average annual rates of growth 1964-67		8.9%		5.4%		4.1%		

Source: Federal Bureau of Statistics (students) and Ministries of Education. Note: (a) End of year.

Table F

Numbers of students and teachers 1967-1969 in fine arts and physical education

Year	Students (a)			Established full-time teachers			Student/teachers (I/III)	
	I		II		Municipal schools		Total	
	Absolute figures	Indexes	Absolute figures	Indexes	Absolute figures	Indexes	Absolute figures	Indexes
1967	8,977	100	833	100	320(b)	100	1,153(b)	100
1968	9,036	101	833	100	330(b)	103	1,161(b)	101
1969			842	101	340(b)	106	1,182(b)	103

Source: Federal Bureau of Statistics and Ministries of Education.

Notes: (a) Middle of the year.
 (b) Estimates.

3. Fine Arts and Physical Education

Table F shows the numbers of students and teachers in fine arts and physical education. (1)

In brief the trend in technical education is satisfactory from the strictly quantitative standpoint as regards non-university institutions of higher education. In teacher-training, however, the number of teachers (exclusively full-time as no survey could be made of the others) has increased more slowly than the number of students. In fine arts and physical education no trend was discerned as the period reviewed was particularly short. But the ratio of students to established staff only was sufficiently low for the quantitative situation to be considered favourable.

III. Composition of the teaching body in higher education

1. Increasing numerical importance of assistant lecturers in higher education

The tendency to assign an increasing number of teaching hours to assistant lecturers has emerged in several countries, and Germany is no exception. The assistants are a potential reserve of future senior or middle level staff. Indeed, they are increasingly called upon to fill vacant posts and even to occupy newly created chairs. Both absolutely and relatively their importance in the university as a whole is rapidly increasing. Moreover, certain bodies such as the "Deutsche Forschung-Gemeinschaft" grant fellowships to young research staff and finance periods of residence for foreign teachers in Germany for periods of three months or more.

2. The part played by teachers coming from secondary schools

A further reservoir of university staff is constituted by secondary school teachers who are preparing for their Habilitation or engaged in independent high-level research. However, their numbers are still low.

3. The part played by women teachers in higher education

Very few women obtain university teaching posts or sit for the Habilitation examination. According to the sources consulted, the preparation for the Doctorate of the Habilitation calls for several years of intensive work and is not very compatible with possible family responsibilities.

According to UNESCO⁽²⁾, there were 15,915 teachers at universities and institutions awarding equivalent diplomas in 1960-61. These teachers included 942 women. The percentage of women teachers was therefore 5.9 per cent.

In non-university institutions⁽³⁾ there were 6,181 teachers including 711 women teachers or 11.5 per cent.

4. The part played by part-time teachers in higher education

According to UNESCO there were 1,872 part-time teachers in university institutions in 1960-61 or (in "physical" terms) 11.7 per cent of all teachers in this type of institution.

(1) "Kunsthochschulen" and "Sporthochschule Köln".

(2) World Survey of Education, Volume IV, 1967.

(3) Restricted to teacher training colleges and similar establishments and to engineering and horticultural schools.

In non-university institutions the absolute figure was 2,211 part-time teachers, i.e. a percentage of 35.8 per cent (in "physical" terms).

IV. Conclusions

Although, in university education, the annual growth rate of teachers has been higher than that of students, the student/teacher ratios have all increased, except the ratio student/JL teacher, over the period reviewed (1952-1966). In fact, while the proportion of senior and middle level teachers has been falling, junior level teachers represented more than half the teaching staff in 1966. In non-university higher education, the trend recorded in technology seems more favourable than in teacher training, but the data available for this type of education cover a very short period only. Throughout higher education, women teachers are still poorly represented.

**TEACHING STAFF BY STATUS AND FIELD OF SPECIALIZATION IN UNIVERSITY INSTITUTIONS
PERSONNEL ENSEIGNANT PAR STATUT ET MÉTIERS DANS LES ÉTABLISSEMENTS DE TYPE UNIVERSITAIRE**

Source : 35

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Table II
 Student enrolments in university institutions
 (in absolute figures & indexes)

	1952-53	1960-61	1966-67	1952-53	1960-61 Indexes	1966-67
Pure science	16,908	30,127	40,559	100	178	240
Architecture	3,775	4,982	5,622	100	132	149
Technology	19,086	34,648	32,937	100	182	173
Agriculture	4,279	4,383	5,294	100	102	124
Medical sciences	16,506	33,988	44,496	100	206	270
Humanities	21,843	49,038	64,487	100	230	295
Education	1,416	3,932	3,162	100	278	223
Fine arts	-	-	-	-	-	-
Law	12,135	18,802	24,999	100	155	206
Social sciences	17,012	25,454	44,543	100	150	262
Others	30	105	329	100	346	1,097
TOTAL (a)	112,990	205,459	266,428	100	182	236

Source: 1952 and 1960: Development of Higher Education, 1950-1967 - Statistical Survey, OECD, 1970 (Germany); from "Grosse Hochschulstatistik". These statistics have appeared annually since 1959-1960 in "Statistisches Bundesamt: Bevölkerung und Kultur, Reihe 10, V. Hochschulen". In previous years these statistics were given in "Statistische Berichte" No.VIII/4.

1966: Answers to "complementary questions".

Note: (a) Not including teacher students for "Grundschule" and "Hauptschule", for "Realschule" and for vocational schools (1966/67 = 15,048).

TABLEAU I: STAFF BY STATUS AND FIELD OF SPECIALIZATION IN UNIVERSITY INSTITUTIONS (UNIVERSITÉS ET AUTRES INSTITUTIONS D'ENSEIGNEMENT SUPERIEUR EN FRANCE ET EN SUISSE) ET ESTABLISSEMENTS DE TYPE UNIVERSITAIRE (INSTITUTIONS D'ENSEIGNEMENT HIGHER)

FIELD OF STUDY	STATUS	LEVEL	TECHNOLOGY	SCIENTIFIC DISCIPLINES	EDUCATIONAL LEVEL	CULTURE	SOCIAL SCIENTIFIC DISCIPLINES	LAW DEPT.	OTHER DEPART.	COUNTRY											DEPARTMENT			
										1	2	3	4	5	6	7	8	9	10	11	12			
Total	Student	155																						
	Staff	50																						
	Teaching	49																						
	Research	1																						
1952/53	23.7	30.4	37.9	100	32.1	35.6	41.4	100	22.7	30.2	47.1	100	12.1	28.2	59.7	100	26.3	42.5	41.4	100	22.6	34.2	100	15.4
1960/61	20.6	39.0	40.4	100	28.0	24.2	47.6	100	19.5	35.6	49.1	100	9.4	36.4	54.2	100	22.9	39.7	37.4	100	19.6	37.6	100	15.9
1966/67	16.4	33.5	50.1	100	20.1	27.6	52.3	100	15.9	25.6	58.5	100	6.4	33.3	56.5	100	16.6	35.2	48.2	100	29.2	35.4	100	20.5

Source : See Table I/05/F Tableau I.

AUSTRIA

I. Criteria for the recruitment and promotion of teaching staff in university type establishments

Austrian university teaching staff is made up of the following types of teachers:

- (1) Full professors, whose main job is teaching.
- (2) Honorary professors, who are given this title because they have done personal work of recognised value and are responsible for certain courses.
- (3) Associate and assistant professors - the latter having received the "venia docendi" (right to give lectures) for the whole of a discipline or in some instances for only part of it.
- (4) Lecturers.
- (5) Guest professors or lecturers.
- (6) Readers responsible for certain courses who have not yet received the "venia docendi".
- (7) Assistant lecturers.

Full and associate professors are civil servants appointed by the Federal President. As a general rule, professors are responsible for the main subjects taught. However, secondary subjects are often entrusted to "contractual teachers". The full-time teaching schedule of professors is at least eight hours of lectures per week, but they often teach more.

Teachers retire at the age of seventy with the title of "Emeritus professor".

In answer to the "complementary questions", the Austrian education authorities pointed out that the statutory qualifications for recruitment as a junior level teacher are laid down in the Act of 11th July, 1962 relating to assistant lecturers in universities. Under this Act, assistant lecturers must have a university degree in the field of study in which they are to teach. In general, it should be a doctor's degree. Assistant lecturers can also be recruited "after satisfying the requirements for graduate staff of the Civil Service".⁽¹⁾ The responsible university authorities propose the appointment or renewal of contract of an assistant lecturer. The initial appointment is for two years, but may be renewed for four years, or for two further periods of two years. However, the services of an assistant lecturer cannot be retained for more than ten years in all unless he has meanwhile satisfied the requirements for becoming a lecturer, or unless his academic performance is such that his appointment as lecturer is only a question of time. If no candidate satisfies the requirements described above, a professor may engage an advanced-level student to help him. Such appointments are restricted to one year. They can be renewed for a period not exceeding four years in all.⁽²⁾ Assistant lecturers can be recruited for part-time work. Part-time assistants must satisfy the same qualification requirements as full-time assistants.

(1) Answers to "complementary questions".

(2) It should be noted that assistants of this type constitute a significant proportion of the teaching body. Answers to the "complementary questions" showed that in 1958/59 there were 927 student-assistants out of a total of 3,692 teachers, i.e. more than 25 per cent for all teachers. In 1966/67 they still accounted for 14 per cent. See in this connection table IV in annex I.

The appointment of full professors ("ordentliche Professoren") and assistant professors ("ausserordentliche Professoren") is part of the autonomous rights of the universities. Only persons who have done academic work of recognised value, or have published some of their research, are accepted as candidates for appointment.

II. Trend in numbers of teachers and students in university type higher education

The statistics available relate only to university teaching.

(1) Numbers and student/teacher ratios

Tables I and II in annex I give the numbers of teachers and students for the years 1953 and 1966. Table A below gives the student/teacher ratios based on these figures.

Table A
Student teacher ratios in 1953 and 1966

Field of study		S/SL	S/ML	S/JL	S/SL+ML	S/Total
Pure science	1953	21.6	8.1	13.3	5.9	4.1
	1966	46.7	25.6	9.8	16.6	6.2
Architecture	1953	44.9	18.1	35.2	10.8	9.4
	1966	111.8	68.1	29.1	42.3	17.2
Technology	1953	41.9	21.0	40.9	14.0	10.4
	1966	74.5	50.4	17.6	30.0	11.1
Medical sciences	1953	33.1	8.9	8.6	7.0	3.9
	1966	111.7	23.5	9.7	19.4	6.5
Agriculture	1953	25.9	9.3	20.6	6.9	5.1
	1966	40.7	15.6	15.0	11.3	6.1
Humanities	1953	19.4	6.9	25.6	5.1	4.2
	1966	55.0	15.7	21.4	12.2	7.8
Fine arts	1953	60.0	5.5	80.0	5.1	4.7
	1966	23.0	2.7	252.7	2.4	2.4
Law	1953	72.7	33.7	236.2	23.0	21.0
	1966	109.4	96.4	58.7	51.9	27.4
Social sciences	1953	113.9	21.2	185.1	17.8	16.3
	1966	106.5	54.8	53.2	36.2	21.5
Total	1953	35.9	10.9	27.4	8.3	6.4
	1966	69.5	20.5	19.6	15.8	8.8

Table A shows how the average number of students per teacher has increased, and how this has led to an increase in the overall ratios of students to all teachers. This trend applies to all fields of study except the fine arts. The same trends are observed for the ratios S/SL + ML.

(2) Annual growth rates in university numbers between 1953 and 1966

These rates are summarised in table B below. They are based on the figures in tables I and II in annex I received in answer to the "complementary questions".

Table B

Annual average growth rates in numbers between 1953 and 1966

(in percentages)

Field of study	Teachers				Students
	SL	ML	JL	Total	
Pure science	4.0	1.0	13.0	6.9	10.4
Architecture	2.3	-1.0	11.4	4.8	9.7
Technology	4.3	1.9	16.3	8.5	9.0
Medical sciences	1.4	3.3	10.4	7.0	11.3
Agriculture	2.2	1.7	9.6	4.5	5.8
Humanities	3.4	5.2	13.7	9.9	12.1
Fine arts	9.4	7.3	-7.3	7.1	1.6
Law	5.0	0.0	20.5	6.2	8.4
Social sciences	8.1	0.0	18.4	5.3	7.6
Total	4.0	4.2	12.2	6.8	9.4

(3) Structural changes in the teaching staff

As a result of differences in the annual average growth rates in the numbers of the various levels of teachers, the proportion of each of these types of teachers changed as follows:

Table C

Structural changes in the teaching staff
(as percentage of total staff)

Field of study	1953/54			1966/67		
	SL	ML	JL	SL	ML	JL
Pure science	18.9	50.3	30.8	13.1	24.0	62.9
Architecture	21.0	52.2	26.8	15.4	25.3	59.3
Technology	24.8	49.7	25.5	14.9	22.0	63.1
Medical sciences	11.7	43.6	44.7	5.8	27.5	66.7
Agriculture	19.9	55.1	25.0	14.8	38.8	46.4
Humanities	21.9	61.6	16.5	14.1	49.5	36.4
Fine arts	7.9	86.2	5.9	10.5	88.6	0.9
Law	28.9	62.2	8.9	25.0	28.4	46.6
Social sciences	14.3	76.9	8.8	20.2	39.3	40.5
Total	17.8	58.9	23.3	12.6	42.7	44.7

It can be seen that there has been a large increase in the proportion of assistant lecturers both in the total and in each field of study except the fine arts.

III. Composition of university teaching staff

The answers to the "complementary questions" indicated that no detailed study has been made of the shortage of teachers in the universities (Hochschule). In this connection, it was noted in the course of the country survey carried out by the OECD in autumn 1968 that:

- (a) there are no serious shortages of teachers in the universities;
- (b) difficulties in finding suitable staff seem to have emerged recently in mathematics and the natural sciences.

No data were available on part-time teachers or on overloaded teaching schedules. However, the proportion of women teachers is shown in table D below, provided by the responsible authorities.

From official sources it was also pointed out that in 1954-1955, women teachers constituted 4 per cent of senior and middle level teachers, and about 13 per cent of junior level teachers. Taking all women teachers in all universities in 1966-1967, we obtain a total of 447, of which 17 higher level, 216 middle level and 214 junior level. Women teachers therefore accounted in that year for 8 per cent of university teachers as a whole, 2.4 per cent of higher level teachers, 9.1 per cent of middle level teachers, and 8.6 per cent of junior level teachers.

IV. Conclusions

The foregoing brief analysis shows that there has been a very large increase in student numbers compared with those of teachers. Except for the fine arts, senior or middle level staffs have always increased much more slowly than students. On the other hand, however, the growth rate in numbers of assistant lecturers has sometimes exceeded that of students. This applies to all fields of study taken together and to pure science, architecture, technology, agriculture, the humanities, law and the social sciences. This faster growth rate in total numbers of assistant lecturers compared with those of students has not prevented a quantitative deterioration in overall student/teacher ratios, on average and for all fields of study except the fine arts.

Table D

Women teachers by field of study and by level

(Numbers and percentages)

		Pure Science		Architecture		Technology		Medical Sciences		Agriculture		Humanities		Fine Arts		Law		Social Sciences			
		SL	ML	JL	SL	ML	JL	SL	ML	JL	SL	ML	JL	SL	ML	JL	SL	ML	JL		
1962-1963 Numbers	-	1	8	-	6	-	4	2	1	5	106	1	4	4	7	73	72	7	123	2	
Percentage	-	1	6	-	6	-	4	1	2	18	2	5	4	3	11	18	14	30	33	2	
1963-64 Numbers	-	1	9	-	1	3	-	3	2	1	4	110	1	4	4	7	86	76	6	139	2
Percentage	-	1	6	-	1	3	-	3	1	1	20	2	4	4	3	13	19	11	26	25	2
1964-65 Numbers	-	1	12	-	1	2	-	3	1	0.5	1	6	117	1	4	10	6	85	96	7	
Percentage	-	1	7	-	1	2	-	3	1	0.5	1	2	17	2	4	10	3	13	20	11	
1965-66 Numbers	-	1	11	-	2	9	-	3	1	0.5	1	6	115	1	5	12	8	75	130	7	
Percentage	-	1	6	-	3	6	-	3	1	0.5	1	2	15	2	5	11	4	9	19	10	
1966-67 Numbers	-	1	11	-	2	9	-	3	1	0.5	1	7	161	1	6	12	9	115	120	7	
Percentage	-	1	5	-	3	6	-	3	1	0.5	1	2	19	2	5	9	4	13	19	9	

Source : Answer to "Complementary Questions".

TEACHING STAFF BY STATUS AND FIELD OF SPECIALISATION IN UNIVERSITY INSTITUTIONS (a)
PERSONNEL ENSEIGNANT PAR STATUT ET BRANCHE DANS LES ÉTABLISSEMENTS DE TYPE UNIVERSITAIRE (a)

COUNTRY : AUSTRIA
PAYS : AUTRICHE
TABLE : I
TABLEAU : I

SOURCE : Ministry of Education - Department for Higher Education (1998)
NOTES : (a) This table includes full time and part time teachers. There are no separate figures for part time teachers

Universitäts-, Hochschullehrer- und sonstige Hochschulprofessoren; M., rechts, leitende, Hochschullehrer, Hochschulprofessoren, Hochschuldozenten, Hochschulassistenten, Gastprofessoren, Gastdozenten und sonstige Lehrkräfte; J., LL., Assistenten und andere Lehrende.

1. secondary professors, lecturers, readers and some teachers of secondary subjects on level "Honoraryprofessoren", Lehrbeauftragte und Praktikanten der Hochschule für Bildende Künste Berlin (HfBK) (see also Professoren, Lehrbeauftragte und Praktikanten der Hochschule für Bildende Künste Berlin (HfBK)).
2. Assistant (Hochschulassistenten)
Par 1c/2-63 (Hochschulassistenten)

However, until 1962-63, the curriculum stayed unchanged for the "Wissenschaftlichen Hochschulen" (Universities). From 1963, it includes "Bundeslehrer Hochschulen" (secondary level teachers). For Kunstschulen and Kunstabteilungen (Fine Arts), the "klassische" education has remained the same.

For the following schools considered are as follows:
Universities 1) Katholisch-Theologische Fakultät (Humanistic), Rechts- und Staatswissenschaftliche Fakultät (Law), Psychiatrische Fakultät Psychische, Philosophische Fakultät (Philosophy), Theologische Fakultät (Theology) and Theologische Fakultät (Theology).

Universität und so weiter und imdrückt, same as für Wien. Für Salzburg: Katholisch-Theologische Fakultät (Humanities), Philosophisches Institut (Humanities),

Technologie, Maschinenbau und Elektrotechnik (Technologie), Geodäsie, Bauingenieurwesen und Architektur (Architecute), Pure Sciences (Geisteswissenschaften), Montanwissenschaften (Technologie), Kulturladernichtkunst (Humanekult), Hochschule für Technik und Wirtschaft Berlin (Technologie), Hochschule für Politik Berlin (Politik)

To the Institutes mentioned above were added : The High School for Social Sciences and Economics (Gesamtschule für Sozialwissenschaften) ; Therarztliche Hochschule (Gez. aufer [sic] Agriculture) ; Hochschule für Rechtswissenschaften (Gez. aufer [sic] Law).

(c) Where teaching is in part or wholly at the Academy for Music and Fine Arts (Akademie für Musik und darstellende Kunst) (Graz) from 1950/51 onwards.

(d) For the university Year 1954-55 there is no breakdown of teachers by field of specialisation; therefore only one column "Total" was filled.

(e) For the following reason:

(e) could be given for "Pure Sciences," "Arts & Sciences," "Medical Science," and "Law."

(S) Only Fine Arts teachers could be designated as "Educators" and Law was included with Business, Business, and Business includes figures.

and 92 succeeded. Quotas were distinguished from total.

COUNTRY AUSTRIA

SL = Senior Level
MU = Middle Level
JL = Junior Level
Status Superior = 55
Status Average = 54
Status Inferior = 51

Sources and notes : see Table I.
Sources et notes : voir Tableau I.

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Note : [3] The indices on this Table have been calculated on the basis of Table I, therefore not all the columns could be completed.
 [B] Les indices de ce Tableau ayant été calculés sur la base du Tableau I, toutes les colonnes n'ont pu être remplies.

Table II

STUDENT ENROLLMENTS IN UNIVERSITY INSTITUTIONS (a)
(Absolute figures and indexes)

Year	Field of specialisation	PURE SCIENCE		ARCHITECTURE (b)		TECHNOLOGY		MEDICAL SCIENCES		AGRICULTURE		HUMANITIES		FINE ARTS		LAW		SOCIAL SCIENCES		TOTAL	
		T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND
1953/54	584	100	1,302	100	1,678	100	2,050	100	803	100	3,102	100	1,440	100	2,834	100	1,481	100	15,274	100	
1954/55	730	125	1,504	116	2,157	129	2,471	121	788	98	4,078	131	1,147	80	3,300	116	1,777	120	17,952	118	
1955/56	748	126	1,589	122	2,392	142	2,881	141	751	94	4,384	141	1,236	86	3,307	117	1,855	125	19,153	125	
1956/57	806	138	1,617	124	2,910	173	3,166	154	766	95	4,869	157	1,348	94	3,480	123	1,901	128	20,863	137	
1957/58	931	159	1,875	144	3,449	2	3,805	186	901	112	5,963	192	1,691	117	4,109	145	2,358	159	25,082	164	
1958/59	1,184	203	2,264	174	4,173	249	4,431	216	965	120	7,364	237	1,904	132	4,859	171	2,547	179	29,791	195	
1959/60	1,295	222	2,739	210	4,895	292	5,141	251	1,082	135	8,479	273	1,372	95	5,509	194	2,842	192	33,354	218	
1960/61	1,634	280	3,522	271	5,611	334	5,944	290	1,226	153	9,642	311	1,341	93	6,318	223	3,295	222	38,533	252	
1961/62	1,823	312	4,083	314	5,933	354	6,638	324	1,352	168	10,752	347	1,391	97	7,168	253	3,505	237	42,645	279	
1962/63	1,821	312	4,433	340	5,803	346	7,297	356	1,527	190	11,606	381	1,408	98	7,680	271	3,887	262	45,662	299	
1963/64	1,894	324	4,394	337	5,616	337	7,409	361	1,587	198	12,395	400	1,644	114	7,884	278	4,473	302	47,297	310	
1964/65	1,979	339	4,430	340	5,333	318	7,734	380	1,594	199	12,915	416	1,818	126	7,989	282	4,304	291	48,096	315	
1965/66	2,066	354	4,299	330	5,271	314	7,961	388	1,696	211	13,418	433	1,887	131	8,133	287	4,164	281	48,895	320	
1966/67	2,104	360	4,359	335	5,138	306	8,266	403	1,671	208	13,708	442	1,769	123	8,097	286	3,833	259	48,945	320	

Sources : See Table I.

Notes: (a) This Table includes also foreign students.

The same institutions and the same breakdown by field of specialisation have been used for students and for teachers. For details concerning those institutions and field of specialisation, see notes (b), (c) and (f) on Table I.

(b) The Ministry of Education, Department for Higher Education has provided a breakdown for students in "Architecture" shown in Table III. In order to facilitate comparison between student and teacher figures, the students enrolled under Structural Engineering have been kept under Architecture.

Table III

Student enrolments - breakdown of the column "architecture" in table II into the two courses of study

Year	Architecture	Structural engineering	Total "Architecture" table II
1953/54	396	906	1,302
1954/55	483	1,021	1,504
1955/56	507	1,082	1,589
1956/57	589	1,028	1,617
1957/58	735	1,140	1,875
1958/59	972	1,292	2,264
1959/60	1,120	1,619	2,739
1960/61	1,590	1,932	3,522
1961/62	1,880	2,203	4,083
1962/63	2,101	2,332	4,433
1963/64	2,056	2,338	4,394
1964/65	2,146	2,284	4,430
1965/66	2,130	2,169	4,299
1966/67	2,157	2,202	4,359

Source: Ministry of Education - Department for Higher Education.

Table IV

Percentages of undergraduate scientific assistants (unqualified university staff) in higher education

Year	Teaching staff in higher education	of whom scientific assistants	% Assistant/All teaching staff
1953/54	3,042	654	21.5
1954/55	3,072	681	22.1
1955/56	3,233	812	25.1
1956/57	3,517	825	23.5
1957/58	3,624	865	23.9
1958/59	3,692	927	25.1
1959/60	3,675	912	24.8
1960/61	3,701	891	24.0
1961/62	3,906	910	23.3
1962/63	4,087	930	22.8
1963/64	4,229	459	10.9
1964/65	4,665	523	11.2
1965/66	5,243	679	12.9
1966/67	5,583	781	14.0

Source: Ministry of Education - Department for Higher Education. Answers to "complementary questions".

ANNEX II

Explanatory notes received from the Higher Education
Department of the Austrian Ministry of Education

Sources of the differences between the tables submitted by the Austrian Ministry of Education in reply to the OECD Questionnaire (DAS/EID/69/4149) "Staff of higher education establishments by level and field of study; student numbers", and the document prepared by the OECD (1970) Development of Higher Education, 1950-1967. Statistical Survey - (Austria).

The notes used to explain the differences are taken from the latter document.

OECD Questionnaire

Development of Higher Education, 1950-1967

Note 1

Students of "pure science" are excluded from "humanities".

Students of "pure science" are included in "humanities"

Note 2

"Architecture" covers students of "construction" and "architecture" in the technical universities: it does not cover students of "architecture" in the fine arts colleges.

The statistics cover only students of "architecture" in the technical universities and the fine arts colleges.

Note 4

Only students enrolled in the "Hochschule für Welthandel" are included in "social sciences". Students of political science and economics are included under law.

The statistics for the "social sciences" include students of the "Hochschule für Welthandel", and those enrolled for political science and economics attached to the faculties of law.

BELGIUM

I. Criteria for the recruitment and promotion of teaching staff

In Belgium, full professors holding chairs, and "chargés de cours", are defined in the Decree of 6th July, 1964. The former are described as "ordinary professors" if employed full-time, and as "extraordinary professors" if they practice a second occupation (which is not often the case). They constitute the senior level teaching staff.

Teachers without chairs are described as "chargés de cours". They are deemed to be full-time teachers if they lecture for at least five hours a week. After 6 years they can be promoted to the rank of professor if they work full-time. "Associate professors" belong to a category of relatively recent origin. These are members of the teaching profession who have the necessary qualifications for professorships or "chargés de cours" and are attached to a professorial chair. They act as assistants to the professor and are mainly employed on research and tutorial work with senior students. Many have previously worked as assistants or as chief assistants. They begin as associate "chargés de cours" and after 6 years are appointed as associate professors. Associate professorships appeal to many young research workers, and provide Belgium with a reserve of potential teachers. They attract young candidates who wish to specialise while at the same time receiving an adequate salary.

Three junior grades of teaching staff are defined in the Royal Decree of 2nd April, 1965.

1. Attachés or assistants (first level) are generally appointed on the proposal of the teacher who is to make use of their services. They must be licentiates or doctors of law, science, medicine or engineering. After four years, if they have completed their doctorate, they may be appointed chief assistants or established librarians.
2. After ten years' experience, a junior assistant may become chef de travaux or répétiteur (second level) provided that he holds a doctorate.
3. Agrégés de faculté and conservateurs agrégés must have 12 years of university teaching behind them after their appointment as "attaché" or "assistant". They must also have obtained the "agrégation" of higher education.

Generally speaking, promotion in the Belgian university hierarchy depends more on academic distinctions, published works and years of service than on teaching ability.

There is little or no inter-university mobility. Many of the teachers have themselves studied in the university where they lecture. Many have, however, completed their education abroad, and this tends to bring a current of "fresh air" into the universities.⁽¹⁾

II. Trends in numbers of teachers and students in universities and equivalent institutions

1. Student/teacher ratios and numbers

In answering the "complementary questions", the Belgian authorities referred to various sources, which have been drawn on for the tables in annex.

Table I gives the numbers of full-time and part-time teachers, and the total numbers, from 1953 to 1966. Table II shows the corresponding numbers of students. Table III gives

(1) Source: "The Recruitment and Training of University Teachers", IAUPL.

the only breakdown by field of study which could be made from the basic material recommended.

The student/teacher ratios in the table below have been calculated from the figures in tables I and II in annex.

Table A

Student/teacher ratios for full-time and part-time teaching staff, by levels, in university-type higher education (in 1953 and 1966)

Year	Full-time					Part-time				
	S/SL	S/ML	S/JL	S/SL + ML	S/Total	S/SL	S/ML	S/JL	S/SL + ML	S/Total
1953	31.3	53.6	54.2	19.8	14.5	24.6	28.8	46.4	13.3	10.3
1966	41.4	48.5	23.4	22.3	11.4	30.4	25.4	19.2	13.8	8.0

2. Average annual growth rates of university numbers, 1953-1966

The following average annual growth rates have been calculated for the various categories of teachers, and for students, from the data contained in tables I and II in annex.

Table B

Average annual growth rates in numbers of teachers and students (1953-1966)

(in percentages)

	Teachers				Students	
	SL	ML	JL	Total		
Full-time	3.9	7.0	13.2	8.1		
Part-time	6.3	7.4	15.6	8.5		
Total	4.5	7.2	13.6	8.2		6.2

3. Structural changes in the teaching staff

As a result of the trends noted above, structural changes have taken place which reflect the more than proportional increase in the numbers of junior level teachers, coinciding with a decline in the proportion at middle level, and still more at higher level.

Table C

Structural changes in the teaching staff in higher education, for full-time teachers, part-time teachers and total number of teachers, (1953-1966)

(as percentage of total staff)

No. of teachers Year	Full-time			Part-time			Total		
	SL	ML	JL	SL	ML	JL	SL	ML	JL
1953	46.3	27.0	26.7	31.1	57.8	11.1	41.9	35.8	22.3
1966	27.5	23.6	48.9	23.9	50.8	25.3	26.5	31.6	41.9

Source: Tables I and II in annex.

Table D

**BREAKDOWN OF RESEARCH AND TEACHING STAFF BY GRADE, FACULTY, SEX
AND FULL-TIME OR PART-TIME SERVICE (31st DECEMBER, 1966 (a))**

Source : Answers to the "complementary questions" supplied by the CNRS - Conseil national de la politique scientifique.

(a) Excluding the Catholic University Faculty of Mons and the Protestant Faculty of Theology. The figures between brackets refer to an estimate for the Free University of Brussels. The breakdown is based on the university syllabus.

III. Composition of the teaching staff in university higher education

Apart from the data given above, only a few figures were available concerning the proportion of women teachers. These additional data are set out in great detail in table D below for the year 1966.

Table D indicates a total of 474 women research workers and teachers, allocated as shown in table E.

It is impossible to say how the proportion of women teachers has changed over time.

It may further be noted that in 1953, part-time teachers represented 28.7 per cent of the total teaching staff, and in 1966, 29.6 per cent. In greater detail, in 1953 part-time teachers accounted for 21.3 per cent of the total number of senior level teaching staff, 46.2 per cent at middle level, and 14.3 per cent at junior level. In 1966, the figures were 26.7, 47.6 and 17.9 per cent respectively.

Table E

Proportion of women teachers in university-type higher education, (a)
by status (full-time and part-time) in December, 1966

	Total number of teachers	Number of women teachers	Percentage of women in the whole teach- ing body
Teaching staff			
Ordinary professors	780	18	2.3
Professors	341	17	5.0
"Chargeé de cours"	972	32	3.3
Total	2,093	67	3.2
Research and other staff			
"Agrégés"	38	1	2.6
"Chefs de travaux"	470	57	12.1
Assistants	1,977	349	17.7
Total	2,485	407	16.4

Note: (a) Excluding the establishments mentioned in footnote (a) of table D.

IV. Conclusions

The figures compiled for our study point to an increase in teaching staff, especially at junior level, which is more than proportional to the rise in student numbers. Only at senior level has the average annual growth rate failed to keep pace with the growth in student numbers.

FULL TIME AND PART TIME TEACHING STAFF BY STATUS IN UNIVERSITIES INSTITUTIONS (a)
 PERSONNEL ENSEIGNANT A PLEIN TEMPS ET A TEMPS PARTIEL, PAR STATUT, DANS LES
 ETABLISSEMENTS DE TYPE UNIVERSITAIRE (a)

Country : BELGIUM
 Pays : BELGIQUE
 Table : I - Absolute figures & Indexes
 Tableau : I - Chiffres absolus & Indices

" = Senior Level (b)
 M = Middle Level (b)
 J = Junior Level (b)
 Statut Supérieur = SS (b)
 Statut Moyen = SM (b)
 Statut Inférieur = SI (b)

ABSOLUTE FIGURES/CHIFFRES ABSOLUS

Years/ Années	Status/ Statut	Full time Plein temps						Part time Temps partiel						Total						Indexes/Indices										
		Full time Temps partiel			Total			Status/ Statut			Full time Plein temps			Part time Temps partiel			Total			Status/ Statut			Full time Plein temps			Part time Temps partiel				
		SI	SS	M	SI	SS	M	SI	SS	M	SI	SS	M	SI	SS	M	SI	SS	M	SI	SS	M	SI	SS	M	SI	SS	M		
1934/35	673	393	389	1 455	152	338	65	585	855	731	454	2 040	1933/34	160	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
1935/36	695	396	456	1 551	157	343	79	619	892	739	539	2 170	1934/35	103	101	118	107	108	101	122	106	104	101	119	106					
1935/36	706	415	498	1 613	201	355	85	641	907	770	577	2 254	1935/36	105	106	126	111	110	105	131	110	106	105	127	110					
1936/37	704	442	502	1 648	211	375	96	682	915	817	598	2 330	1935/36	105	112	129	113	116	111	148	117	107	112	132	114					
1937/38	721	472	572	1 765	227	391	112	730	948	863	684	2 495	1937/38	107	120	147	121	125	116	172	125	111	116	151	122					
1938/39	752	477	674	1 903	242	418	119	779	994	895	793	2 682	1938/39	112	121	173	131	133	124	183	133	116	122	175	131					
1939/40	756	516	808	2 080	246	429	153	826	1 002	945	951	2 908	1939/40	112	131	206	143	135	127	235	142	117	129	212	143					
1940/41	788	571	960	2 319	253	471	182	906	1 041	1 042	1 142	3 225	1939/40	117	145	247	159	139	139	280	155	122	143	252	153					
1941/42	823	671	1 058	2 552	275	521	199	995	1 098	1 192	1 257	3 547	1941/42	122	171	272	175	151	154	306	170	128	163	277	174					
1952/53	852	745	1 164	2 771	266	581	226	1 093	1 148	1 326	1 390	3 864	1951/52	128	190	299	190	157	172	346	187	134	161	306	189					
1953/54	901	860	1 297	3 058	328	639	261	1 220	1 229	1 499	1 558	4 286	1952/53	134	219	333	210	180	189	402	210	144	205	343	210					
1954/55	940	921	1 441	3 302	349	713	293	1 355	1 289	1 634	1 734	4 657	1953/54	140	214	370	227	192	211	451	232	151	224	382	228					
1955/56	1 056	913	1 710	3 689	376	796	356	1 538	1 442	1 709	2 076	5 227	1954/55	158	232	440	254	207	236	563	263	169	234	457	256					
1956/57	1 104	944	1 958	4 006	403	857	427	1 687	1 801	2 385	5 693	1955/56	164	240	503	275	221	254	657	288	176	246	525	279						

Source : "Rapport de la Commission spéciale", p. 332 to 347 of annexes.
 Answers to "Complexe antwerp questions".

Notes : (a) Includes staff in the following institutions : State University of Ghent, Free University of Brussels, Catholic University of Louvain and Mons, State University of Liege, State University Centers in Antwerp and Ghent, State Veterinary and Ghent, Royal Veterinary School of Brussels, Royal Military School of Antwerp, Royal Institute of Technology (Cureghem), Notre Dame de la Paix University of Namur, St Ignatius University of Brussels, Notre Dame of St. Louis University of Antwerp, Polytechnic School of Mons.

(b) SS = Professors. SM = "Chargés de cours", "Professeurs adjoints", "Chefs de travaux" and assistants. SI = "Assistants. All "agréés", "chefs de travaux" and assistants. All "agréés", "chefs de travaux" included "les chefs de travaux", "les chefs de clinique", "les conservateurs et les bibliothécaires", "les titulaires d'assistanats", "first assistants", "monitors and associates". It has not been possible to separate teaching staff and no-teaching staff. Therefore our figures include an indeterminate number of non-teaching staff. SI = Assistants. All "agréés", "chefs de travaux" and assistants. All "agréés", "chefs de travaux". And assistants "les chefs de travaux", "les titulaires d'assistanats", "first assistants", "monitors and associates". It has not been possible to separate teaching staff and no-teaching staff. Therefore our figures include an indeterminate number of non-teaching staff. SI = Professors ordinaires et professeurs. SZ = Chargés de cours, agrégés, chefs de travaux. SI à Liège, Centre universitaire de l'Etat à Louvain, Centre universitaire de l'Etat à Mons, Faculté des Sciences agronomiques de l'Etat à Gembloux, Faculté agronomique de l'Etat à Gand, Faculté de Médecine vétérinaire de l'Etat à Bruxelles (Cureghem), Ecole royale militaire à Bruxelles, Institut universitaire Saint-Louis à Bruxelles, Faculté universitaire Notre-Dame de la Paix à Namur, Faculté universitaire Saint-Louis à Louvain, Faculté polytechnique de Mons.

(b) SS = Professeurs ordinaires et professeurs. SZ = Chargés de cours, agrégés, chefs de travaux. SI = Titulaires de l'Ecole de Louvain, Université catholique de Louvain, Université de l'Etat à Louvain, Université de l'Etat à Mons, Faculté des Sciences agronomiques de l'Etat à Gembloux, Faculté agronomique de l'Etat à Gant, Faculté de Médecine vétérinaire de l'Etat à Bruxelles (Cureghem), Ecole royale militaire à Bruxelles, Institut universitaire Saint-Louis à Bruxelles, Faculté universitaire Notre-Dame de la Paix à Namur, Faculté universitaire Saint-Louis à Louvain, Faculté polytechnique de Mons.

Table II

Student enrolments in university institutions^(a)
(1953-1966)

Absolute figures & indexes

Year	Enrolments	Indexes
1953	21,067	100
1954	21,737	103
1955	22,462	107
1956	23,580	112
1957	24,742	117
1958	26,137	124
1959	27,276	129
1960	28,101	133
1961	29,615	141
1962	31,484	149
1963	33,074	157
1964	36,477	173
1965	40,261	191
1966	45,749	217

Source: Answers to "complementary questions"; Annexes to "Rapport de la Commission Spéciale", p.332 to 347.

Note: (a) These institutions are similar to those taken into account for the teachers; see note (a), table I.

Table III

Teaching staff by status and field of specialisation (full-time and part-time)
(31st December 1966) (a) (b)

Field of specialisation	Status	Full-time			Part-time			Total					
		SL	ML	JL	Total	SL	ML	JL	Total	SL	ML	JL	Total
Pure science	280	262	580	1,122	18	41	46	105	298	303	626	1,227	
Architecture	-	-	-	-	-	-	-	-	-	-	-	-	
Technology	108	231	369	708	12	39	12	63	120	270	381	771	
Medical sciences	204	312	368	904	30	92	15	137	234	404	403	1,041	
Agriculture	99	89	123	311	7	45	1	53	106	134	124	364	
Humanities	311	178	279	768	38	103	49	190	349	281	328	958	
Education	24	52	88	164	2	27	15	44	26	79	103	208	
Fine arts	-	-	-	-	-	-	-	-	-	-	-	-	
Law	133	47	113	293	14	45	29	88	147	92	142	381	
Social sciences	141	86	155	382	92	221	29	342	235	307	184	724	
Other	4	45	14	63	-	5	-	5	4	50	14	68	
Total	1,304	1,302	2,109	4,715	213	618	196	1,027	1,517	1,920	2,305	5,742	

Source: Answers to "complementary questions"; Annexes to "Rapport de la Commission Spéciale", p.332 to 347.

General remark: The basic document (table D in text) presents a more detailed breakdown of teaching and scientific university level staff than the one to be found in table I. Figures for Brussels University could not be broken down; they are given in parenthesis. Breakdown for this institution was made according to courses and therefore the figures do not correspond perfectly with those of table I in this annex.

Notes: (a) The Catholic Faculty of Mons and the Faculty of Protestant Theology are not included.
(b) See note (b) to table I.

CANADA

I. Criteria for the recruitment and promotion of teaching staff

University teachers in Canada are classified as follows: deans, professors, associate professors, assistant professors, lecturers and instructors; demonstrators, class and laboratory assistants and fellows.

The associate and assistant professors in any university department usually outnumber the full professors. Staff are often recruited as assistant professors or at a lower level.⁽¹⁾ Academic qualifications and published works usually count for more than teaching experience in the choice of staff. Promotion is not automatic, but after a probationary period, generally lasting three years, promotions occur every five years on average.

Teachers are usually allowed to practise a second paid occupation, within reasonable limits. It must not take up more than a certain proportion of their time, or yield more than a certain proportion of their income.

In the past, university teaching staff were largely recruited abroad. Especially after the Second World War, there was no difficulty in recruiting teachers from various universities in Europe and the United States. Recently, however, it has become increasingly difficult to induce foreign teachers with the required qualifications to emigrate to Canada. Furthermore, many Canadian students who have received a university education abroad subsequently fail to return to their native land.⁽²⁾

To remedy the shortage of teachers, a special degree, intermediate between the Master's degree and the Ph.D., was introduced by the University of Toronto: the Phil.M. This qualification carries two-thirds of the value of the Ph.D., and is sufficient to enter a university teaching career. In addition, the Canadian Universities Foundation has recommended a policy designed to encourage Canadian students who have completed their studies abroad to take up teaching in Canada.

Canadian institutions of higher education often offer studies for one or more years at post-secondary level. Junior colleges provide a type of education half-way between university and non-university type of education. Table II in annex shows that between 1954 and 1965 the number of full-time students in university education trebled, but that during the same period the number of part-time students and students at (non-university) technical colleges increased twice as fast again. Teacher training colleges have seen their numbers slowly decrease since 1964 to the advantage of the universities.

There are no major distinctions between state and private institutions. The latter are often heavily subsidised by the Government, and the school boards may consist of both private individuals and official representatives.

(1) World Survey of Education, Vol.IV, UNESCO.

(2) For full information on these questions, reference should be made to L.H. Cragg, M.G. Ross and E.F. Sheffield: Canadians in U.S. Graduate Schools. A Rich Pool of Potential Canadian University Teachers and Research Workers. A Report to the Canadian Universities Foundation, April 1965; and Ernest Sirluck: The Crisis in Canadian Universities. A lecture delivered at the University of Manitoba, November, 1964, published in Varsity Graduate.

II. Trends in numbers of teachers and students in higher education

A. University education

1. Student/teacher ratios and numbers

Tables E and I and II in annex show the numbers of students and senior and middle level teachers on the one hand and the total number of teachers on the other. Generally, these tables cover a 10-14 year period. Table A, which contains a certain number of student/teacher ratios for the beginning and end of the period shows when analysed that it is the student/teacher ratio for middle level teachers which has improved during this time. For senior level staff the student/teacher ratio increased at first and then decreased again but did not reach the level it held at the beginning of the period. If part-time students are included, the ratio tends to increase (except for middle level teachers). As in the United States, the ratio for the total number of students/total number of teachers is slowly decreasing.

Table A

Trends in (full and part-time) student/full-time teacher ratios

	Full-time studs. SL	Total stu- dents SL	Full- time studs. ML	Total stu- dents ML	Full- time studs. SL+ML	Total stu- dents SL+ML	Full- time studs. Total teachers	Total stu- dents Total teachers
1956/57	66.6	77.6	28.3	33.0	19.9	23.1	11.2	13.1
1963/64	-	-	-	-	-	-	12.2	16.6
1965/66	88.7	120.5	22.0	30.0	17.7	24.0	-	-
1967/68	72.3	-	17.4	-	15.9	-	12.6	-

2. Average annual growth rates of university numbers

The period studied covers the years 1956 to 1967. No precise data could be obtained for assistants and other teachers of a corresponding level. Point (4) below simply gives an estimate of the part they played during the period.

The average annual growth rates are shown in table B below.

Table B

Average annual growth rates in numbers of university teachers and students

(in percentages)

Total number of teachers	Teachers			Full-time students
	SL	ML	Total SL+ML	
10.4	9.4	15.3	13.8	11.5

The results of table A have been confirmed. The numbers of senior level teachers and the total number of teachers have not increased as rapidly as the total number of students.

3. Breakdown by field of study supplied in answer to the complementary questions

A breakdown of this sort was available only for senior and middle level teachers. No directly comparable figures could be compiled for students. The data, such as they are, are given in tables IV and IV bis in annex.

It can be seen that the fastest growth was in the numbers of teachers of pure sciences, the humanities and education. Whereas the average annual growth rate in all the fields examined was 13.3 per cent, it was 14.7 per cent in pure sciences, 17.3 per cent in the humanities and 17.5 per cent in education. For agriculture, on the other hand, the average annual growth rate did not exceed 4.5 per cent, and for architecture 7.9 per cent (table III in annex).

4. Supplementary data on the other categories of teachers

The main available data on teachers relate to senior and middle level teachers. Nevertheless, by examining the data supplied on these (table I in annex) and those for the teaching staff as a whole (table E) it is possible to deduce the importance of the role played by subordinate staff (demonstrators, class and laboratory assistants, fellows, etc.). This category is rather like that for "junior instructional staff", which was met in the data on the United States. Between 1956/57 and 1967/68 the number of teachers in this group increased from 3,046 to 4,322 - clearly a smaller increase than that for the other categories of teachers. During the period considered their importance relative to the teaching body as a whole has fallen from 44 to 21 per cent.

B. Non-university education

As we have seen, there is no sharp distinction in Canada between universities and other higher educational institutions.

The following figures were, nevertheless, supplied in answer to the complementary questions. Table C shows the number of full-time staff in the institutes of technology. It has not been possible to show these with the numbers of students.

On the other hand it has been possible to follow the trends in numbers of full-time teachers (see table D) and trends in numbers of students (see table II in annex) in non-university level teacher training colleges between 1954/55 and 1965/66. It appears that during this period the student/full-time teacher ratio has doubled from 1/7.3 to 1/14.6 - a much higher ratio than that in university education. However, part-time teachers seem to play an important role, and we have unfortunately been unable to assess them on a full-time basis, to show the precise nature of the part they play.

Table C

Full-time teaching staff in non-university post-secondary institutions (a)

Year	Numbers in community colleges (b)	Indexes	Numbers in nursing schools	Indexes
1963/64	1,921	86
1964/65	1,694	100	2,222	100
1965/66	2,038	120	2,263	102
1966/67	2,442	144	2,408	108
1967/68	3,583 (c)	212	2,454	110
1968/69	3,400 (d)	201	2,498	112
Average annual growth rate 1964/68	19.0%		5.0% 1963/68 : 5.4%)	

Source: Vocational Section and Higher Education Section, Dominion Bureau of Statistics, April 30, 1969.

- Notes:
- (a) For technical institutes, UNESCO (World Survey of Education, Vol. IV) quotes the number of full-time teachers as being 880 in 1951 and 850 in 1960 teaching a smaller number of students than that given in table II in annex (11,206 and 9,443 respectively).
 - (b) "Community colleges" are deemed to include all non-university post-secondary establishments except non-State nursing schools. Except for a few technical institutes, most Community colleges have been recently developed.
 - (c) Excluded from these figures are seven colleges of general and vocational education and two institutes.
 - (d) Excluding figures for the Province of Quebec, which are not yet available.

III. Composition of the teaching staff in higher education

1. Proportion of women teachers in higher education

In non-university teacher training colleges the proportion of women teachers (part-time as well as full-time) has fallen fairly steadily since the beginning of the period when they played an important part.

The percentage of full-time women teachers in proportion to the total full-time teaching staff has fallen from about 60 per cent around 1960 to 39 per cent in 1968. The trends for part-time women teachers, though more irregular, show a similar pattern, falling from more than 50 per cent in 1963 to 37 per cent in 1968 (see table D). In institutes of technology, however, again according to UNESCO⁽¹⁾, the percentage of women teachers was about 8.9 per cent of the total number of teachers in 1960/61.

According to the answers to the "complementary questions" the number of higher and middle level women teachers increased in universities and university colleges between 1958 and 1968 from 10.7 per cent of the total higher and middle level teaching staff to 13.2 per cent. According to UNESCO⁽¹⁾ full and part-time women teachers represented 14 per cent of the full and part-time teaching staff between 1957/58 and 1961/62.

(1) World Survey of Education, Vol. IV.

Table D

Teaching staff in non-university type teacher training colleges (1954-1968) (a)

Year	Full-time				Part-time				% of women teachers in relation to total	
	Total		Women Teachers		Total		Women teachers			
	Absolute figures	Indexes								
1954-55	1,200	67	**	**	**	**	**	**	**	
1955-56	**	**	**	**	**	**	**	**	**	
1956-57	1,020	57	**	**	**	**	**	**	**	
1957-58	1,055	59	**	**	**	**	**	**	**	
1958-59	1,056	59	624	56	59	**	**	**	**	
1959-60	1,697	95	1,069	95	63	**	**	**	**	
1960-61	1,796	100	1,121	100	62	136	100	58	**	
1961-62	1,610	90	899	80	56	506	372	389	100	
1962-63	1,476	82	710	63	48	560	412	296	43	
1963-64	1,463	82	700	62	48	564	415	296	43	
1964-65	1,411	79	664	59	47	445	327	227	51	
1965-66	1,295	72	585	52	45	594	457	25	43	
1966-67	1,328	74	553	49	42	680	500	247	426	
1967-68	1,305	73	507	45	39	559	411	206	355	
1968-69									37	

Source: Elementary-Secondary Section, Education Division, DBS, April 30, 1969.

Note: (a) A few teacher training colleges were absorbed by universities in the course of this period.
 Such was the case in British Columbia, Saskatchewan (1964-65), Manitoba and Prince Edward Island (1965-66).

Table E

Breakdown of the teaching staff in university-type higher education
(universities and colleges) into full-time and part-time teachers
(1954-1963)

Year	Full-time			Part-time			Total
	Absolute figures	Index	Absolute figures	Index	Absolute figures	Index	% of part-time teachers
1954-55	6,474	100	5,237	100	11,711	100	45
1955-56	7,719	104	5,347	102	12,066	103	44
1956-57	7,000	108	5,560	106	12,560	107	44
1957-58	7,500	116	5,790	111	13,290	113	44
1958-59	8,200	127	6,075	116	14,275	122	43
1959-60	9,200	142	6,400	122	15,600	133	41
1960-61	9,755	151	6,700	128	16,455	141	41
1961-62	10,540	163	7,130	136	17,670	151	40
1962-63	11,670	180	7,540	144	19,230	164	39
1963-64	12,940	200	7,990	153	20,950	179	38
1964-65							
1965-66							
1966-67							
1967-68	20,700(a)	320				-	-

Sources: Survey of Higher Education, DBS, 1954-1965.
Survey of Vocational Education and Training, DBS, 1961-64.

Note: (a) Estimates.

It will be seen from tables IV, V and VI in annex (number of university senior and middle level teachers by field of study) that the number of women teachers increased between 1957 and 1968 both in absolute and in relative terms. The increase is particularly marked in pure sciences, medical sciences and the humanities. In other fields of study their number is still almost negligible. Again, in others (e.g. in education), there has been an increase in the absolute figure but the proportion has declined.

Table V in annex shows that the percentage of senior level women teachers is much lower than the percentage of middle level women teachers. Some champions of the cause of improved status for women therefore demanded the abolition of discriminatory measures against women teachers, to give them an equal chance of promotion with men. This would enhance their incentive to attain high qualifications and thus improve the available supply.⁽¹⁾

2. Proportion of part-time teachers in higher education

A clear picture emerges from tables D and E.

In non-university education, part-time teachers in State institutes of technology amounted to less than 10 per cent of the teaching body at the very beginning of the '60's.⁽²⁾

Table D seems to indicate that the strength of part-time teachers in teacher training institutions increased in the early '60's - rising from 7 per cent of the total teaching staff in 1961 to 30 per cent in 1968.

Table E⁽³⁾ shows the number of full-time and part-time teachers in higher educational institutions (universities and colleges) over a 10 year period. It is clear that the number of part-time teachers is relatively large, although it declined from 45 to 38 per cent between 1954 and 1963.

In answer to the "complementary questions" it was stated that no satisfactory basis existed for the conversion of part-time teachers to the equivalent of full-time teachers.

IV. Conclusions

An evaluation of the growth of the total full-time teaching staff in higher university education from 1954 to 1967 (table E) shows that a great effort to recruit staff has been successful. In the ten years between 1954 and 1963 the number of teachers doubled, and between 1954 and 1967 it more than trebled. The student/teacher ratio seems to have risen during the '60's in institutes, affiliated colleges and junior colleges. Women teachers are about three times as well represented in teacher training colleges (nearly 40 per cent) than in university-type education (14 per cent of senior and middle level teachers). There are more part-time teachers in university education than in teacher training colleges (38 per cent compared with 28 per cent in 1963/64).

(1) "One obvious source of recruits - the second sex - has until very recently been completely overlooked. Women students have not been actively encouraged to go on to graduate work, and those who have done so have been subjected to every sort of frustration in finding and establishing themselves in university teaching positions, except for a brief emergency shortage during and after World War II. Some universities have refused outright to appoint women to permanent positions; many have dismissed women teachers if they marry; most refuse rank and tenure to women whose husbands teach in the same department - and so on through an almost inexhaustible list of major and petty discriminations." (Marion Smith, University of Manitoba. "The Recruitment and Training of University Teachers." (IAUPL).

(2) Source: World Survey of Education, UNESCO, Vol.IV.

(3) Answers to "complementary questions".

ANNEX I

Table I

Full-time teaching staff (senior level and middle level) in university institutions

Year	Status	SL (a)		ML (b)		Total	
		Absolute figures	Indexes	Absolute figures	Indexes	Absolute figures	Indexes
1956-57		1,179	100	2,775	100	3,954	100
1957-58		1,267	107	3,116	112	4,383	111
1958-59		1,328	115	3,475	125	4,803	121
1960-61		1,440	122	4,504	162	5,944	150
1962-63		1,654	140	5,787	209	7,441	188
1963-64		1,814	154	6,808	245	8,622	218
1965-66		2,322	197	9,340	337	11,662	295
1967-68		3,160	268	13,218	476	16,378	414
1968-69		3,614	307	15,051	542	18,665	472

Source: Dominion Bureau of Statistics, Education Division.

Notes: (a) SL = Deans and titular professors.

(b) ML = Associate professors, assistant professors, ungraded professors, lecturers and instructors.

Table II

Student enrolments in university and non-university institutions (a)

Year	University				No -university (full-time)			
	Full-time Absolute figures(b) Indexes	Part-time Absolute figures(b) Indexes	Total Absolute figures(b) Indexes	Teacher training Absolute figures(b) Indexes	Total Absolute figures(b) Indexes	Teacher training Absolute figures(b) Indexes	No -university (full-time) Technical institutions Indexes	
1954-55	68,320	100	10,800	100	79,100	100	8,700	100
1955-56	72,737	106	10,133	94	82,800	105	10,700	123
1956-57	78,504	115	13,000	120	91,500	116	10,400	120
1957-58	86,754	127	17,600	163	104,400	132	11,500	132
1958-59	94,994	139	27,100	251	122,100	154	14,700	169
1959-60	101,934	149	28,900	268	130,800	165	16,700	192
1960-61	113,864	167	31,200	289	145,100	183	19,000	218
1961-62	128,894	189	38,100	359	167,000	211	20,400	234
1962-63	141,388	207	44,000	407	185,400	234	20,900	240
1963-64	158,388	232	57,000	528	215,400	272	23,800	274
1964-65	178,238	261	63,800	591	242,000	306	21,900	252
1965-66	205,888	301	73,900	684	279,800	354	20,600	237
1966-67	232,672	341	-	-	-	-	-	-
1967-68	261,207	382	-	-	-	-	-	-

Sources: First column: Higher Education Section - Education Division, DBS
 Other columns: Enrolments in Schools and Universities 1951-52 to 1975-76 by W.M. Illing and Z.E. Zsigmond.
Economic Council of Canada (Staff study No.20 - October 1967).

Notes:
 (a) Schools of nursing not included.
 (b) Rounded totals.

Table III

Rate of growth of full-time teaching staff by field of specialisation;
global rate of growth of teaching staff (senior level and middle level)
and full-time students (in university institutions)

Field of specialisation	Teaching staff		Students
	Rate of growth 1956-1967		Rate of growth 1956-1967 Total
	Total		
Pure science	14.4		...
Architecture	7.9		...
Technology	10.6		...
Total science and technology	14.8		...
Medical sciences	12.3		...
Agriculture	4.5		...
Humanities	17.3		...
Education	17.5		...
Fine arts	12.2		...
Law	13.9		...
Social sciences	11.7		...
Others	11.1		...
TOTAL	13.8		11.5
SL (a)	9.4		
ML (b)	15.3		

Source: Bureau of Statistics, Education Division.

For the classification by field of specialisation, see table IV.

Notes: (a) SL = Deans and titular professors.

(b) ML = Associate professors, assistant professors, professors ungraded, lecturers and instructors.

Table IV

FULL-TIME FEMALE AND MALE TEACHING STAFF (SENIOR LEVEL AND MIDDLE LEVEL) BY FIELD OF SPECIALISATION
IN UNIVERSITIES INSTITUTIONS

Year	Field of specialisation	PURE SCIENCE (a)		ARCHITECTURE		TECHNOLOGY (b)		MEDICAL SCIENCES (c)		HUMANITIES (d)		EDUCATION (e)		FINE ARTS (f)		SOCIAL SCIENCES (g)		OTHER (h)		TOTAL				
		F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T	F	T					
1956/57		1,179		41		430		522		320		798		230		26		66		145		195	3,954	
1957/58	105	26	2	47	-	421	108	552	8	315	69	894	66	239	8	24	1	82	30	169	74	212	471	4,383
1958/59	1,550		49		489		607		326		953		280		31		66		137		245		4,805	
1960/61	166	1,991	2	55	5	685	134	721	5	322	97	1,112	129	436	10	36	1	108	35	189	110	280	694	5,945
1962/63	2,601		60		780		846		386		1,490		562		39		138		240		299		7,441	
1963/64	2,867		64		832		939		411		2,032		655		57		146		299		320		8,622	
1965/66	355	3,880	-	87	6	969	270	1,174	21	437	379	3,052	236	953	24	108	4	185	48	385	142	432	1,465	11,662
1967/68	5,155		95		1,306		1,866		517		4,599		1,352		99		277		469		623		16,376	
1968/69	598	6,115	1	113	5	1,459	507	2,248	29	546	692	4,821	347	1,584	23	124	7	301	53	632	199	722	2,461	18,655

Source : Dominion Bureau of Statistics, Education Division.

Notes : (a) Includes Pure Science and Arts and Science. "Arts and Science", includes an undeterminate number of teachers in Arts connected with Humanities which could not be distinguished from those ones in Sciences.

(b) Includes Engineering and Applied Science.

(c) Includes Dentistry, Medicine, Nursing, Pharmacy, Physico and Occupational Therapy.

(d) Includes "Arts" and Theology (see note "a").

(e) Includes Education and Physical and Health Education.

(f) Includes Music.

(g) Includes Business, Business Administration and Social Work.

(h) Includes Faculties, etc., NDA and Household Science.

Table IV bis

Full-time teaching staff (senior level and middle level)
by field of specialisation in university institutions
(a)

Year	Field of specialisation	Pure science	Architecture	Techno-logy	Medical sciences	Agricul-ture	Human-ities	Educa-tion	Fine arts	Law	Social sciences	Other	Total
1956-57	100	100	100	100	100	100	100	100	100	100	100	100	100
1957-58	121	115	98	106	98	112	104	86	124	117	109	111	111
1958-59	131	120	114	116	102	119	122	111	130	129	126	121	121
1960-61	169	134	159	138	101	139	190	129	164	130	148	150	150
1962-63	-	221	146	181	162	121	187	244	139	209	166	153	188
1963-64	243	156	193	180	128	255	285	204	221	206	164	218	218
1965-66	329	212	225	225	137	382	414	386	280	266	222	295	295
1967-68	437	232	304	357	162	576	588	354	400	337	319	414	414
1968-69	519	276	339	431	171	604	689	443	456	436	370	472	472

Note: (a) For source and classification by field of specialisation, see notes to table IV.

Table V

Percentages of female teachers at
universities according to status (a)

Year \ Status	SL	ML	Total
1957-58	3.6	13.7	10.7
1960-61	4.2	14.1	11.7
1965-66	4.0	14.9	12.7
1968-69	3.5	15.5	13.2

Note: (a) For source and classification, see notes to table IV.

Table VI

Percentages of female university teachers (senior level + middle level)
by field of specialisation (a)

Field of specialisation \ Year	1957/58	1960/61	1965/66	1968/69
Pure science	7.4	8.3	9.1	9.8
Architecture	4.3	3.6	-	0.9
Technology	-	0.7	0.6	0.3
Medical sciences	19.6	18.6	23.0	22.6
Agriculture	2.5	1.6	4.8	5.3
Humanities	7.7	8.7	12.4	14.4
Education	27.6	29.5	24.8	21.9
Fine arts	33.3	27.8	22.2	18.5
Law	1.2	0.9	2.2	2.3
Social sciences	17.8	18.5	12.5	8.4
Other	34.9	38.2	32.9	27.6
Total	10.7	11.7	12.7	13.2

Note: (a) For source and classification by field of specialisation, see table IV.

DENMARK

I. Criteria for the recruitment and promotion of teaching staff

The teaching staffs of the universities of Denmark include professors, heads of institutes, lecturers, heads of clinics, tutors, laboratory technicians, assistants and secretaries (amanuensis). When a post is vacant it is normally advertised publicly, but in special cases direct appointments may be made. University qualifications together with a certain teaching experience are the criteria for selection. Nearly all the candidates recruited hold a doctor's degree. It may therefore be assumed that they are fully qualified to perform their duties, if not from the teaching point of view, at least as far as knowledge acquired and specialisation are concerned. For the great majority of posts there are no hard and fast rules that they should be occupied by full-time - as opposed to part-time holders.

Training colleges are directed by Rectors: the teachers are known as "training college lecturers"; in principle they have themselves been trained either in universities or training colleges.

II. Trend in numbers of teachers and students in higher education

Reference to the national yearbooks has made it possible in the present study to cover nearly all the university institutions and some other non-university higher level institutions.⁽¹⁾ The figures obtained on this basis are grouped in tables I and II in the annex.

1. Numbers and student/teacher ratios

On the basis of the absolute figures shown in tables I and II in annex, it has been possible to calculate the overall student teacher ratios. These are summarised in table A below.

Table A
Student/teacher ratios in 1950-51 and 1966-67

	No.of students per senior level teacher S/SL	No.of students per middle level teacher S/ML (a)	No.of students per junior level teacher S/JL (a)	No.of students per senior + middle level teacher S,SL + ML (a)	No.of students per teacher overall S/Total
1950-51	47.9	58.4	27.9	26.3	13.5
1966-67	71.0	116.8	10.0	44.2	8.2

Source: See table I in annex.

Note: (a) Owing to changes in statistical methods in 1960, the ratios for the two different years mentioned are not comparable.

(1) These institutions are mentioned in notes (a) (e) (f) (g) and (h) of table I in annex.

(a) Additional data for some institutions

Table III shows the number of professors and of "lektorer" employed in higher education at 1st April, 1962 in the towns of Copenhagen and Aarhus. According to the table the numbers of professors (senior level) and of "lektorer" (middle level) in these two universities are more or less the same. It should also be noted that although the number of senior teaching staff more or less coincides with the number given in the Danish Statistical Yearbook the number of middle level staff is far higher (468 against 186). There is no apparent explanation for these differences.

According to a French study published in December 1967 by the Secretariat General of the Government⁽¹⁾ there were 180 professors, 1,011 "lektorer" and assistants, and 16,874 students in 1965 in Copenhagen University. The student/teacher ratio was therefore 14. At Aarhus for the same year there were 103 professors and 5,926 students. The new University of Odensee received its first students in autumn 1966. On 15th August, 1966, professors were appointed to the following Chairs: anatomy, chemistry, biochemistry, Norse literature, philosophy, Slav languages, classical philology, English, Romance languages, history and German.

The colleges of dentistry each have a Rector assisted by 12 professors and about 140 other staff. In 1965, there were 397 students at the Aarhus College of Dentistry (overall ratio 2.6).

In 1965, the Royal College of Veterinary and Agricultural Sciences had 1,350 students and 190 professors and assistants (ratio 7.1). It has not been possible to obtain an explanation for the discrepancies noted in the figures derived from different sources.

(b) The teacher training colleges

In 1961 there were 1,272 teachers in a certain number of non-university teacher training colleges. These teachers gave lectures for 7,765 students, the overall ratio being 6.1.

Finally in October 1966, the breakdown of teachers of the training colleges by level of training was as follows:

	Teachers with university degrees	Teachers holding training college diplomas	Other teachers	Total
Permanent full-time teachers	293	445	84	822
Part-time teachers	143	278	150	571
Total	436	723	234	1,393

Comparing these with the number of training college students calculated for 1966/67 (in Development of Higher Education, 1950-1967 - Statistical Survey, Denmark, OECD, Paris, 1970), the student/teacher ratio would have been (11,529/1,393) = 8.3.

(c) Fields of study

Finally, by way of indication, mention must be made of some estimates made in June 1967 for certain fields of study by the Board for Higher Educational Planning ("Skitse for

(1) Notes et Etudes documentaires: l'enseignement au Danemark, p.22, No.3443.

Udbygningen af de Højere Uddannelser i Tiden indtil 1980", p.45) of the number of teachers and students in 1966. They are summarised in table B below.

Table B

Estimated numbers of students and permanent teaching staff in 1965-66

Field of study	Students	Permanent teaching staff	Student/permanent teaching staff ratio
Pure science	3,200	500	6.4
Technology	3,490	645	5.4
Agriculture	1,270	270	4.7
Medical sciences	7,150	420	17.0
Humanities	8,340	275	30.3
Social sciences (a)	7,055	245	28.8
Total	30,505	2,355	12.9

Note: (a) This apparently includes law students.

2. Annual average growth rates in staff and student numbers

The figures in tables I and II in annex show that the number of teachers increased at the rate of 11.4 per cent, whereas that of the students increased at the rate of approximately 7.7 per cent between 1950 and 1966.

The annual average rates of increase of teachers according to level of staff are not significant for the period as a whole except for senior level teachers. Between 1950 and 1966, this category of teachers increased at the rate of 4.6 per cent. Table C which follows shows for two periods (1950-58 and 1960-66) the respective rates of increase for the different categories of teachers and students.

Table C

Annual average growth rates in numbers of staff
(by level of staff) and students

(in percentages)

Year	SL	ML	JL	Total	
				Teachers	Students
1950-58	2.7	3.5	6.6	4.8	0.5
1960-66	6.7	15.4	18.5	16.4	13.4

The considerable difference between the rates of increase for the first and second periods is explained, at least in part, by the fact that eight institutions were examined in the first period, whereas in the second the number of institutions covered increased from one year to another.

3. Structural changes in the teaching body

Taking the Danish Statistical Yearbook as reference the proportion of teachers at the different levels seems to have changed as follows between 1950-51 and 1966-67.

Table D
Percentage breakdown of teachers by level

Years	SL	ML	JL
1950	28.3	23.2	48.5
1958	23.8	20.9	55.3
1960 } (a)	19.3	7.3	73.7
1966 }	11.5	7.0	81.5

Note: (a) The first two percentages and the last two are not comparable.

III. Composition of the teaching staff in higher education

It has not been possible to obtain sufficient information on this point.

No data are available on the participation of women teachers in university education. For non-university education in 1961/62 there were 228 women among the 1,272 teachers in the teacher training colleges, not including the Denmark Teacher Training College.⁽¹⁾ The percentage of women teachers to the total number of teachers in these institutions was therefore approximately 18 per cent.

It has not been possible to ascertain what proportion of the demand was met by part-time teachers or the part played by overtime in this respect. However, in 1966 in teacher training institutions, there were 671 part-time teachers out of a total of 1,393 teachers, representing 41 per cent of all teachers in these institutions.

The answers to the "complementary questions" showed that senior and middle level teachers are employed full time with the exception of "lektorer".

Junior level staff are on a part-time basis. In many cases the part-time teachers have a teaching load equivalent to a full-time teacher. The data shown in table I in annex refer to teaching posts of all kinds, including combined teaching/research positions. Some teachers hold two posts at the same time, one for research and one for teaching.

IV. Conclusions

It is difficult to draw general conclusions from such disparate data. One or two precise features can, however, be emphasised.

The number of teachers increased far more rapidly than that of students between 1950-51 and 1966-67. This seems to have been largely due to the employment of a high proportion of assistants and teachers under contracts.

In the official reply to the "complementary questions" attention was drawn however to a shortage in the number of teachers which seems unlikely to be remedied in the near future owing to the "explosion" in student numbers in the '60's.

(1) Source: UNESCO, World Survey of Education, Volume IV.

ANNEX I

Table I

Teaching staff by status in university institutions

Status Year	Absolute figures				Indexes			
	SL (b)	ML (c)	JL (d)	Total	SL	ML	JL	Total
1950/51(a)	284	233	488	1,005	100	100	100	100
1951/52	290	216	596	1,102	102	93	122	110
1952/53	297	225	617	1,139	105	97	126	113
1953/54	313	237	658	1,208	110	102	135	120
1954/55	315	252	688	1,255	111	108	141	125
1955/56	322	253	706	1,281	113	109	145	127
1956/57	339	265	721	1,325	119	114	147	132
1957/58	345	266	737	1,348	121	114	151	134
1958/59	348	305	809	1,462	123	131	166	145
1959/60								
1960/61	391	149	1,489	2,029	138	64	305	202
1961/62(e)	413	188	2,183	2,784	145	81	447	277
1962/63(f)	444	220	2,580	3,244	156	94	529	323
1963/64	445	229	2,970	3,644	157	98	609	363
1964/65	486	255	3,443	4,184	171	109	706	416
1965/66(g)	504	298	3,916	4,718	177	128	802	469
1966/67(h)	579	352	4,108	5,039	204	151	842	501

Source: Statistical Yearbooks of Denmark.

Notes: (a) From 1st April 1951 to 1st April 1959, 8 higher education establishments were taken into account, that is:

- Copenhagen University
- Aarhus University
- the Higher Polytechnical School
- the School of Agriculture and Veterinary Sciences
- the Higher School of Dentistry
- the School of Pharmacy
- the School for Higher Commercial Studies
- the Academy of Fine Arts.

(b) Professors holding a Chair in higher education were included under SL.

(c) The Research Assistants (Docenter), the Lecturers (Lektorer), the Research Scholars (Universitetsadjunkt) and, as of 1961, the Heads of Scientifics Departments (Afdelingsleder) are included in the ML.

(d) All other members of the higher education teaching staff, with the exception of those listed in notes (b) and (c), are included in the JL.

(e) In addition to the 8 establishments listed under note (a), 2 new schools were taken into account for the year 1961:

- the Danish Academy for Engineers
- the Higher School of Dentistry of Aarhus.

(f) To the schools already mentioned is added, as of 1962:

- the Higher Teacher Training College.

(g) As of 1965, the Higher School of Commerce of Aarhus.

(h) For 1966, the following are also included:

- the University of Odensee
- the School of Architecture.

Table II
Student enrolments in university institutions (a)

Year	Enrolments	Indexes
1950/51	13,607	100
1951/52	12,752	94
1952/53	12,568	92
1953/54	12,395	91
1954/55	12,647	93
1955/56	12,510	92
1956/57	12,991	95
1957/58	13,174	97
1958/59	14,182	104
1959/60	-	-
1960/61	19,381	142
1961/62	20,924	154
1962/63	23,853	175
1963/64	26,884	198
1964/65	32,376	238
1965/66	37,381	275
1966/67	41,119	302

Source: Statistical Yearbooks of Denmark (1951-1958 and 1961-1967).

Note: (a) Students from the same schools as those taken into account for the teachers.

Table III
Teaching staff of senior and middle status in university
type institutions in Copenhagen and Aarhus
- 1st April 1962 - (a)

Status	SL	ML
Field of specialisation		
Theology	18	5
Law	18	21
Social sciences & economics	17	17
Medical sciences	58	68
Humanities	81	77
Pure sciences	66	96
Total university	258	284
Technical schools	68	52
Engineering schools	-	33
School of dentistry	22	21
School of pharmacy	7	12
Agricultural and veterinary schools	42	36
Schools of architecture	19	12
Teacher training schools	12	-
Schools of commerce	11	18
Schools of music	14	-
TOTAL	453	468

Source: "Planlaegningsrådet for de Højere Uddannelser": "Skitse for udbygningen af de højere uddannelser i tiden indtil 1980".

Note: (a) No figures are available for junior level.

SPAIN

In the early '60's there were 12 State universities providing higher education in Spain and also two universities of theology and a private Catholic university. In addition, there were a certain number of higher technological institutes, of which the most important were: two schools of civil engineering, (Madrid and Barcelona); an institute of aeronautical engineering in Madrid; three schools of architecture (Barcelona, Seville and Madrid); agricultural institutes in Madrid and Valencia; a civil engineering institute in Madrid; schools of industrial engineering in Madrid, Barcelona and Bilbao; an institute of textile engineering in Barcelona; and institutes of mining engineering, forestry, marine engineering and telecommunications, all in Madrid.

I. Criteria for the recruitment and promotion of teaching staff

At the summit of the university teaching hierarchy are the titular professors (established posts) who give the main courses in their subject and are responsible for those who teach other aspects of it. All titular professors must hold a doctor's degree; when a Chair becomes vacant, the acting professor appointed to it usually has the same qualifications and carries out the same duties. Associate professors must also have a doctor's degree, and are usually responsible for seminars. Lecturers usually hold a doctorate degree (though sometimes only a "licenciado") and lecture on subsidiary subjects, assisted by junior lecturers. Teaching assignments calling for high specialisation are often given to extraordinary professors who have made a name for themselves in that particular subject. These teachers are appointed by a commission of university experts. Appointments to established posts are made from among professors already holding a Chair, or may be filled by open competitive examinations which are always held in Madrid before a board specially set up for each case. Only holders of a doctor's degree who have completed two years of teaching research in a State institution are admissible as candidates. Titular professors acquire the status of civil servants. Acting professors are appointed for three years, and lecturers and junior lecturers for one year only. These appointments are renewable on the recommendation of the Dean of the faculty after consultation with the professor of the subject concerned. Professors are encouraged to engage in research in subjects of particular interest to them, although they are under no obligation to do so.

In the technological institutes providing university type higher education, the teaching staff is composed of established titular professors, acting professors, associate professors, visiting professors, lecturers in charge of courses, special lecturers, demonstrators, and workshop and laboratory auxiliary staff. The recruitment of staff in these institutes is governed by the same criteria as those applicable to university professors.

Titular professors are appointed for life. They must hold a doctor's degree. Visiting professorships are usually assigned to professors from other universities who have made a name for themselves as teachers in a particular field.

The Mediterranean Regional Project Report on Spain (published by the OECD in 1965) described the problems involved in the recruitment of the teaching body as follows:

"The present method of selection and the structure of the professorial body in general have serious faults. The first of these is the very sharp distinction between senior professors and all other teachers. A system permitting greater mobility in promotion would be much

more efficient. The second fault is selection by competitive examination, which forces senior professorship candidates to concentrate on acquiring encyclopaedic knowledge which does not appear to be the most suitable. The third fault is the contradiction between the fact that appointment to professorship presupposes, in principle, that the applicant is completely trained, and the necessity for assistant professors and lecturers acting as senior professors to dedicate part of their time to parallel occupations, at the expense of teaching and their own studies."

II. Trends in numbers of teachers and students in higher education

A. Universities and university-type institutions

1. Enrolments and student/teacher ratios

The statistics on higher education (1) have made it possible to examine the general trend and establish a breakdown by major fields of study between 1955 and 1965. Tables I and II in annex show the numbers of teachers and students, and the various student/teacher ratios have been calculated on this basis, both in overall terms and by level of teaching staff. These ratios are given in table A. For technical statistical reasons, three periods are considered. The first covers 1955 to 1959. The second, from 1960 to 1964, opens with a sharp fall in the overall number of teachers and a less marked decline in the number of students. This fall is attributable to the exclusion of "ayudantes" (assistants), "auxiliares" and other junior level teachers from the statistics presented (see note (b) of table I in annex). This explains the wide disparities between both student/junior level teachers and overall student/teacher ratios before and after 1960. The same disparities will be observed in almost all subsequent breakdowns, and since the explanation is the same we shall not refer to it again.

Presentation of the statistical data for 1965 roughly resembles that used for the period 1955-1960, but there are one or two differences.

2. Annual average growth rates

For the reasons given above, it has been necessary to consider two separate periods: the period before 1960 and the period 1960-1964; table B summarises the trends in numbers by field of study and level for these two periods.

3. Structural changes in the teaching staff

These changes are summarised in table C, which covers three separate periods, again allowing for differences in statistical approach. The first extends to 1959-60, the second from 1960-61 to 1964-65 and the third covers the year 1965-66. In almost all fields of study the exclusion of certain junior level teachers from the statistical data has resulted in an apparent relative increase in numbers of senior and middle level teachers, whereas the proportion of senior level teachers often fell between 1951 and 1959.

Table C shows clearly that there was a proportionally higher increase in the number of assistants and similar teachers between 1960 and 1964, a trend which has been observed in other countries.

(1) Source: National Institute of Statistics: Estadística de la Enseñanza en España.

Table A

Student/teacher ratios by field of study and level of teaching staff

Field of study		S/SL	S/ML	S/JL	S/SL + ML	S/T
Pure science	1955-56	54.9	26.5	16.2	17.9	8.5
	1959-60	82.0	34.5	28.0	24.3	13.0
	1960-61	82.2	36.9	44.5	25.5	16.2
	1964-65	111.4	63.1	56.3	40.3	23.5
	1965-66	103.5	44.7	29.8	31.2	15.2
Architecture (a)	1951-52	18.2	123.6	19.3	15.8	8.7
	1964-65	123.7	35.6	16.2	27.7	10.2
	1965-66	132.3	38.3	19.3	29.7	11.7
Technology	1951-52	12.6	207.9	8.7	11.9	5.0
	1959-60	58.5	57.3	30.8	28.9	14.9
	1960-61	51.4	39.5	34.8	22.3	13.6
	1964-65	82.7	42.7	18.5	28.2	11.2
	1965-66	91.6	47.5	25.8	31.3	14.1
Medical sciences	1955-56	110.2	60.0	34.4	38.8	18.3
	1959-60	100.9	51.6	20.7	34.1	12.9
	1960-61	88.0	46.1	488.4	30.2	28.5
	1964-65	101.0	54.8	181.1	35.5	29.7
	1965-66	111.3	47.8	55.9	33.4	20.9
Agriculture	1954-55(b)	14.8	207.0	37.6	13.8	10.1
	1955-56	50.4	46.2	22.7	24.1	11.6
	1959-60	45.0	21.1	18.3	14.4	8.1
	1960-61	48.4	21.6	47.7	14.6	11.4
	1964-65	40.9	24.8	18.6	15.4	8.4
	1965-66	61.7	21.9	26.5	16.2	10.1
Humanities	1955-56	34.5	26.3	12.4	14.9	6.8
	1959-60	39.5	26.0	19.5	15.7	8.7
	1960-61	48.5	37.8	47.5	21.2	14.7
	1964-65	67.4	51.7	47.4	29.3	18.1
	1965-66	69.4	50.8	26.3	29.3	13.9
Law	1955-56	126.9	97.1	33.7	55.0	20.5
	1959-60	96.6	63.1	24.6	38.2	15.0
	1960-61	89.4	60.5	195.3	36.1	35.4
	1964-65	81.7	57.3	186.6	33.7	28.5
	1965-66	89.5	47.0	48.7	50.8	18.9
Social sciences	1955-56	143.2	46.8	15.5	35.2	10.8
	1959-60	92.6	76.6	20.1	41.9	13.6
	1960-61	181.9	77.6	104.3	54.4	35.8
	1964-65	241.0	173.2	140.3	100.8	58.7
	1965-66	217.2	107.7	71.1	72.0	35.8
Total	1950-51	84.1	63.1	31.1	36.1	16.7
	1955-56	64.7	49.5	24.3	28.1	11.7
	1959-60	73.5	45.4	42.4	28.1	12.8
	1960-61	72.8	42.6	74.6	26.8	19.8
	1964-65	92.1	53.8	44.8	34.0	19.3
	1965-66	97.8	47.5	34.3	65.1	16.5

Notes: (a) The statistics for architecture were not affected by the new classification of junior level teachers in 1960.

(b) In the case of agriculture, the statistics cover a larger number of institutions after 1954-55. Four separate periods are therefore shown: 1952-1954; 1955-1959; 1960-1964; and 1965.

Table B
 Average annual rate of growth
 (in percentages)

Field of study		Teachers				Students
		SL	ML	JL	Total	
Pure science	1955-59	4.0	7.7	0.3	3.4	14.9
	1960-64	2.4	-3.3	4.0	0.5	10.5
Architecture	1951-59	-0.4	25.0	4.6	5.5	13.7
	1960-64	3.1	13.9	43.0	26.0	33.0
Technology	1951-59	4.4	49.0	8.0	10.4	27.0
	1960-64	2.2	14.3	37.5	22.5	16.5
Medical sciences	1955-59	2.3	3.9	13.6	9.2	0.0
	1960-64	3.3	1.3	35.5	4.6	5.8
Agriculture	1953-59	14.8	-(a)	7.6	44.0	36.0(a)
	1960-64	6.2	-1.6	28.9	9.7	1.7
Humanities	1955-59	4.7	8.5	-3.4	1.8	8.3
	1960-64	5.5	6.8	14.5	8.8	14.6
Law	1955-59	2.8	6.9	3.9	4.5	-4.0
	1960-64	2.4	1.7	80.0	5.8	0.3
Social sciences	1955-59	40.0	11.2	17.9	18.8	26.0
	1960-64	7.0	-6.4	6.7	1.5	14.9
Total	1950-59	6.0	8.4	7.7	7.6	4.5
	1960-64	3.5	3.6	25.0	10.5	9.9

Source: Basic tables I and II in annex.

Note: (a) The rate has no significance owing to the very low number in the first year.

Table C

Structural changes in the teaching staff

(as percentage of total staff)

Periods Year	I						II						III					
	1951-52			1959-60			1960-61			1964-65			1965-66					
SL	ML	JL	SL	ML	JL	SL	ML	JL	SL	ML	JL	SL	ML	JL	SL	ML	JL	
Pure science	15.5 (a)	32.1 (a)	52.4 (a)	15.8	37.7	46.5	19.7	43.9	36.4	21.1	37.2	41.7	14.1	34.1	51.2			
Architecture	47.9	7.0	45.1	30.3	27.5	42.2	18.5	43.2	38.3	8.3	28.7	63.0	8.9	30.6	60.5			
Technology	39.8	2.4	57.8	25.5	26.1	48.4	26.5	34.5	39.0	13.5	26.1	60.4	15.4	29.7	54.9			
Medical sciences	16.6 (a)	30.4 (a)	53.0 (a)	12.8	24.9	62.3	32.4	61.8	5.8	29.4	54.2	16.4	18.3	13.8	37.4			
Agriculture	23.2 (a)	25.3 (a)	51.5 (a)	17.9	38.1	44.0	23.5	52.6	23.9	20.6	34.1	45.3	16.3	45.9	37.8			
Humanities	19.6 (a)	25.7 (a)	54.7 (a)	22.0	33.4	44.6	30.2	38.9	30.9	26.9	35.0	38.1	20.0	27.3	52.7			
Law	16.5 (a)	21.5 (a)	62.0 (a)	15.5	23.7	60.8	39.6	58.5	1.9	34.9	49.8	15.3	21.0	40.2	38.8			
Social sciences	7.5	23.0	69.5	14.7	17.7	67.6	19.7	46.1	34.2	24.3	33.9	41.8	16.5	33.2	50.3			
Total	20.6	28.8	56.6	17.4	28.2	54.3	27.1	46.4	26.5	21.0	35.9	43.1	16.9	34.8	48.3			

Source: See table I in annex.

Note: (a) Year 1955-56, not 1951-52.

Table D

Part played by women teachers in higher education from 1940 to 1966

Field of study	1940-41	1950-51	1955-56	1960-61 (b)	1966-67 (c)	Annual average growth rate
General total (a)						
Number of teachers	1,865	3,439	4,116	2,791	6,272	4.8
of whom women	66	248	349	-	860	10.4
percentage of women teachers	3.5	7.2	8.5	-	13.7	
Sciences						
Number of teachers	274	729	845	807	1,546	6.9
of whom women	15	104	104	-	248	11.4
percentage of women teachers	5.5	14.3	12.3	-	16.0	
Medical sciences and pharmacy						
Number of teachers	877	1,055	1,232	686	1,710	2.6
of whom women	17	19	38	-	185	9.6
percentage of women teachers	1.9	1.8	3.1	-	10.8	
Agriculture (d)						
Number of teachers	24	229	203	145	188	8.2
of whom women	-	2	3	-	11	-
percentage of women teachers	-	0.9	1.5	-	5.9	-
Humanities						
Number of teachers	297	695	791	589	1,590	6.7
of whom women	31	111	188	-	381	10.1
percentage of women teachers	10.4	16.0	23.8	-	24.0	
Law						
Number of teachers	393	509	832	386	807	2.8
of whom women	3	9	9	-	23	8.1
percentage of women teachers	0.8	1.8	1.1	-	2.9	
Social sciences (e)						
Number of teachers	-	222	213	178	431	(1950-66) 4.2
of whom women	-	3	7	-	12	9.0
percentage of women teachers	-	1.4	3.3	-	2.8	

Source: Estadística de la Enseñanza superior en España, series 1966-67-68.

Notes: (a) Excluding architecture and technology.

(b) Excluding assistant professors.

(c) Including professors at the pontifical universities.

(d) Veterinary studies only.

(e) Political science, economics and commerce.

B. Non-university type higher education institutions

In a number of non-university higher education institutions (schools of music, dramatic art and fine arts)⁽¹⁾, there were 273 teachers and 9,138 students in 1957-58. In 1961-62 there were 304 teachers and 9,428 students. Only the overall student/teacher ratio could be calculated; it fell from 33.5 to 31. The growth rates in numbers of teachers and students were 2.7 and 0.8 per cent respectively. It was not possible to obtain any other information.

III. Composition of the teaching staff in higher education

In addition to the breakdown by level of teaching staff, it has been possible to compile a few details concerning the composition of the teaching staff.

1. Part played by women teachers

UNESCO has provided various quantitative data on the part played by women teachers in non-university type higher education. There were 77 women out of a total of 307 teachers in 1960-61, i.e. 25.3 per cent, in the nine higher education schools of fine arts, dramatic art and music.

The statistics on higher education in Spain also provide figures for women teachers in university education from which table D below has been constructed. From 1940 to 1966, the proportion of women teachers increased continuously from 3.5 per cent to 13.7 per cent of total teaching staff. These figures, unfortunately, do not include technology or architecture which would tend to reduce this percentage.

2. Part-time staff

No figures on part-time staff could be obtained. However, the Mediterranean Regional Project report on Spain states that "where titular professors are not required to teach on a full-time basis (although most of them have no other teaching responsibilities), the number of hours of lectures they give per week is between three and six according to the faculty and the subject taught. Those working full-time have to teach 36 hours per week, though only part of this time is actually spent in formal lecturing. At the moment 30 per cent of the titular professors are employed on a full-time basis and 70 per cent on a part-time basis, but it would be better if the proportions were reversed".⁽²⁾

IV. Conclusions

Owing to frequent changes in the statistical approach, the strictly quantitative trends in numbers of teachers in higher education can be determined for short periods only.

From 1955 to 1960 the overall number of teachers increased faster than the number of students in agriculture, medicine and law only. The overall student/teacher ratio in university education therefore increased. Conversely, this ratio fell in the period 1950-1960, which indicates a proportionally higher rate of increase in numbers of teachers in the early fifties. The numbers of teaching staff at all levels increased faster than the numbers of students between 1950 and 1959. The overall numbers of teachers rose more rapidly than those of students in technology, agriculture and law from 1960 to 1964. Between 1950 and 1965 there has been little change in the overall student/teacher ratio in university education.

Generally speaking, the number of middle-level teachers has shown the highest rate of increase.

In the fine arts schools, which are treated as non-university type higher education institutions, UNESCO has provided some figures which indicate a proportionally higher increase in numbers of teachers.

(1) World Survey of Education, Volume IV: 8 institutions in 1958 and 9 in 1961.

(2) Mediterranean Regional Project - Spain, OECD, Paris, 1965.

TEACHING STAFF BY FIELD OF SPECIALISATION IN UNIVERSITY INSTITUTIONS (FULL TIME AND PART TIME)
 PERSONNEL ENSEIGNANT PAR BRANCHE DANS LES ETABLISSEMENTS DE TYPE UNIVERSITAIRE
 (PLEIN TEMPS ET TEMPS PARTIEL)

Senior Superior = SS
 Middle Level = SM
 Junior Level = SJ
 Senior Inferior = SI

COUNTRY : SPAIN
 PAYS : ESPAGNE
 TABLE : I bis (Indexes)
 TABLEAU : I bis (Indices)

Field of specialisation/ Branches Year / Année	PURE SCIENCE SCIENCES PURÉES	ARCHITECTURE	TECHNOLOGY TECHNIQUE	MEDICAL SCIENCES SCIENCES MÉDICALES	AGRICULTURE	HUMANITIES LETTERS	LAW DROIT	SOCIAL SCIENCES SCIENCES SOCIALES	TOTAL			
									SL SS	ML SM	JL SI	T
1951/52			100						100	100	100	100
1952/53			94							105	100	105
1953/54			91							104	122	110
1954/55			111							114	136	121
1955/56	100	110		117	100	677			100		113	134
1956/57	106	100	131	100	127	125	686	96	105	129	116	116
1957/58	105	104	137	107	126	132	757	100	110	117	115	128
1958/59	121	111	145	131	166	136	751	99	113	153	124	129
1959/60	114	117	154	174	221	142	909	107	119	199	132	149
1960/61 (a)	100	100		100			100	100	100			100
1961/62	109	104		119			102	116	129	101	98	100
1962/63	108	136		163			98	146	117	104	107	103
1963/64	95	179		187			116	149	123	132	117	110
1964/65	106	254		225			120	145	140	125	106	115

Note : (a) see note (b) on table I.
 Note : (a) voir note (b) du tableau I.

STUDENT ENROLLMENTS IN UNIVERSITY INSTITUTIONS
EFFECTIFS D'ÉTUDIANTS DANS LES ÉTABLISSEMENTS
DE TYPE UNIVERSITAIRES

ABSOLUTE FIGURES/CHIFFRES ABSOLUS

COUNTRY : SPAIN
PAYS : ESPAGNE
TABLE : II
TABLEAU : II

INDEXES/INDICES

Field/ spécialisation/ équivalents	Year / Année	ABSOLUTE FIGURES/CHIFFRES ABSOLUS										TOTAL
		PURE SCIENCE SCIENCES PURÉES	PURE SCIENCE SCIENCES PURÉES	MEDICAL SCIENCES MÉDICALES	MEDICAL SCIENCES MÉDICALES	HUMANITIES LETTERS	HUMANITIES LETTERS	LAW DROIT	SOCIAL SCI. SCIENCES SOC.	OTHER AUTRES	TOTAL	
1950/51										54 605	150/50	
1951/52		618	2 079							53 728	151/52	
1952/53		664	2 356		302					58 143	152/53	
1953/54		498	2 533		354					59 580	153/54	
1954/55		463	2 696		414					58 666	154/55	
1955/56	7 193	543	3 395	22 484	(a) 2 271	5 347	17 385	2 291		61 409	155/56	
1956/57	8 154	1 170	3 582	23 195	(a) 5 474	5 680	19 471	3 290		68 226	156/57	
1957/58	10 397	1 259	9 009	23 895	(a) 2 863	6 486	17 847	4 082		75 816	157/58	
1958/59	10 679	1 416	15 101	23 413	(a) 5 055	6 853	15 724	5 104		81 315	158/59	
1959/60	12 552	1 723	13 692	22 501	(a) 2 564	7 345	14 773	5 742		83 892	159/60	
1960/61	13 071	1 350	11 250	19 538	(a) 2 857	8 648	13 673	6 365		76 752	160/61	
1961/62	13 290	1 779	14 222	20 095	(a) 2 628	9 554	13 438	7 034		82 040	161/62	
1962/63	14 869	1 903	15 118	21 740	(a) 2 480	10 624	13 418	8 200		68 353	162/63	
1963/64	17 788	2 390	17 789	24 888	(a) 3 108	12 433	14 103	10 356		102 825	163/64	
1964/65	19 489	4 205	20 755	24 454	(a) 3 070	14 894	15 812	14 087		111 765	164/65	
1965/66	19 562	5 826	23 002	28 272	(a) 4 278	17 559	15 307	11 950		125 650	165/66	
										150 431	204 153	201 112 166
										(a)		164

Source : Estadística de la Enseñanza superior en España.
Note : (a) Includes High Schools for Agriculturalists, High School for Engineers in Forestry and School of Veterinary.

(a) Comprend les Ecoles techniques supérieures d'ingénieurs agronomes, l'Ecole technique supérieure d'ingénieurs des Eaux et Forêts et la Faculté de médecine vétérinaire.

UNITED STATES

I. Criteria for the recruitment and promotion of teaching staff

The criteria applied by United States universities for the recruitment of teachers vary considerably from one university to another. Some institutions merely require a doctorate awarded by any higher education institution, public or private, well-known or otherwise. In some cases, it may not even be necessary for the candidate to hold a university degree, provided that he has won recognition in his own field. The most common examples of this are to be found in the humanities, the fine arts, music and commerce. Even for senior level teachers, access to a university career involves few formalities.

As a rule, the candidate sends a letter of application to the university of his choice, while universities, in which posts have fallen vacant, circulate details of the vacancy to the others. They thus hope to attract post-graduate students, holding a Master's degree, and often preparing a doctoral thesis.

The novice teacher very often begins as an instructor. When he has acquired some experience, taken further training and proved his teaching ability, he is promoted to assistant professor, then to associate professor; finally he is appointed as full professor. Students holding first university degrees are often required to put in some teaching or to direct research work. At the same time, they may continue to study for a higher degree, or carry out research on their own account.⁽¹⁾

A post may often be offered and accepted through a simple exchange of letters. The full probationary period generally lasts seven years, during which time the appointment is renewable from year to year. If the candidate is already a doctor, it is more and more usual for him to begin his teaching career as assistant professor. He normally has to wait five years to become an associate professor, and seven more years to be appointed full professor.

In 1962/63 the percentage of teachers holding doctorates in university faculties and colleges offering courses of at least four years were as follows: 78 per cent of professors, 61 per cent of associate professors and 42 per cent of assistant professors (see table D). In 1966/67 the percentages were slightly smaller, except in the category of professors (see table E).

II. Trends in numbers of teachers and students in higher education

The data used allow only two main groups of teachers to be distinguished, and not three. The first group includes all teachers of at least the level of instructor; the second, all teachers or assistants below that level (junior instructional staff): most of the latter are students who have done very well in their first university examinations. This situation normally arises in institutions offering studies leading to a degree-credit. There is also another category - that of "other instructional staff". This includes teachers who fit into neither of the two main groups and who are assigned to other specific teaching tasks (see note (b) of table I in annex).

(1) World Survey of Education, UNESCO, Volume IV.

1. Student/teacher ratios and numbers

For the period 1955-1967, tables I and I bis in annex give a breakdown for the teaching staff by length of service. They also estimate the total number of staff on a full-time basis, according to which a part-time teacher is given the value of one-third of a full-time teacher. Tables II and II bis deal with the same period for students and it has therefore been possible to calculate both the growth rate of numbers of students and teachers and the trends in student/teacher ratios from 1955 to 1967 (see table A).

During this 13 year period, the total number of students has multiplied by 2.5. Taking account of their small numbers at the beginning of this period, the number of students following courses not leading to a degree-credit have grown much more rapidly than those studying for a degree-credit. In 1967 they reached the index 379 (1955 = 100) compared with 243 for the other category of students - this being estimated on a full-time basis. In the same period the number of teachers more than doubled (index 209) showing a slower growth rate than that for students, as can be seen from the following table:

Table A
Student/teacher ratios (a)

	Full-time and part-time				Equivalent to full-time			
	1955	1960	1965	1967	1955	1960	1965	1967
<u>Study for a degree-credit</u>								
Students/total number of teachers	11.7	12.2	12.9	13.3	13.2	13.5	14.7	15.2
Students/"instructor" or above	13.4	14.2	15.2	15.6	14.0	14.5	15.8	16.3
Students/lower level teachers	88.3	85.3	86.3	88.2	212.2	202.5	211.6	214.6
<u>Total in higher education</u>	10.2	10.8	11.6	12.1	11.3	11.8	12.9	13.5

Source: Tables I, I bis, II, II bis in annex.

Note: (a) Taking account of the different sources of the data for students and teachers (see notes (b) to table I and (a) to table II in annex) no significance could be attached to any supplementary ratio for non-degree-credit studies.

The different ratios when considered show a slow deterioration of the student/teacher ratio.

2. Average annual growth rates

Table B confirms the results shown in the previous table. On a full-time basis, the average annual rate of growth for teachers from 1955 to 1967 was 6.3 per cent while that for students was 7.9 per cent.

3. Structural changes in the teaching staff

Where we have been able to analyse the composition of the teaching staff in the sector of studies leading to a degree-credit, it appears that there has been little change in the period under consideration. In 1955, 93.8 per cent were of instructor level or above. In 1967 these teachers represented 93.2 per cent of the total number of teachers (on a full-

Table B

Average annual growth rates of teachers and students between 1955 and 1967

(in percentages)

		Full-time and Part-time				Full-time equivalent					
		Studies for a degree-credit		Studies not for a degree-credit		Total in higher education		Studies for a degree-credit		Studies not for a degree-credit	
		Teach.	St.	Teach.	St.	Teach.	St.	Teach.	St.	Teach.	St.
Instructor or above		6.2						6.3			
Junior instructional staff		7.5						7.6			
Total		6.4	7.5					6.4	7.4		
"Other instructional staff"				5.9	11.6			5.8	11.7		
Overall total						6.3	7.8			6.3	7.9

Sources: Tables I, I bis, II, II bis in annex.

time basis). Moreover in the whole teaching body (including teachers assigned to courses other than those leading to a degree-credit) the number of "other instructional staff" had slightly declined from 17.4 per cent of the total number of teachers in 1955 to 16.5 per cent in 1967.

4. Breakdown of numbers of teachers and students by main fields of study

Table C gives a breakdown by field of study and category of professors in the different faculties and 4-year colleges in 1963. It shows that "professors" then represented 27 per cent of the total number of teachers, a percentage confirmed in table D in a different breakdown of staff (also for 1963).

Unfortunately, it has not been possible to show the corresponding data for students.

III. Composition of the teaching staff

There are nearly 2,500 institutions of higher education in the United States. They apply widely differing criteria for recruitment and nomination. This clearly makes for great flexibility in coping with any teacher shortage. To overcome existing shortages, recourse has already been had to employing "temporary" women staff, and holders of Master's Degrees (M.A.) who are preparing for their Doctorates (Ph.D.) for a determined period. Use has also been made of foreign teachers as visiting lecturers and visiting professors for one or more years.

A certain number of secondary level teachers have also been recruited. It would, however, be increasingly difficult for a teacher after several years' teaching in a secondary institution to gain a university post. This trend is therefore declining.⁽¹⁾ The percentage of teachers with doctorates shown in tables D and E partly reflects the flexibility of recruitment.

1. Proportion of women teachers in higher education

Professor Henry H. Remark⁽¹⁾ observes that although in theory academic careers are equally open to teachers of both sexes, there is in practice a certain discrimination against women because they cannot be counted on to stay in the profession. This is also used as a pretext for maintaining certain differences in salary scales. It should further be noted that the percentage of women teachers in American universities has not increased, and may even have diminished, over the last 30 years, whereas the percentage of women students has steadily grown. It is mainly the better American universities which are free of discrimination in this respect.⁽¹⁾

The US Office of Education⁽²⁾ states that, in spring 1963, there were 24,642 women teachers and 113,560 male teachers in the "teaching faculties" of the universities and colleges providing a complete four-year course. This means that the proportion of women teachers was 18 per cent.

(1) Henry H. Remark: The Recruitment and Training of University Teachers, (IAUPL).

(2) Teaching Faculty in Universities and Four-year Colleges, Spring 1963, Appendix C, table 1 (US Office of Education).

Table C
 Breakdown by field of study and level of total
 number of teachers (Spring 1963)
 (University faculties and 4-year colleges)

	Total	Professors	Other teachers (h)	% of professors	Division by fields
Pure science (a)	19,470	6,127	13,343	31	14
Technology (b)	9,497	2,879	6,618	30	7
Medical sciences (c)	18,395	5,465	12,930	30	14
Agriculture	2,986	1,124	1,862	38	2
Humanities (d)	29,045	6,796	20,729	23	21
Education (e)	16,998	4,020	12,978	24	12
Fine arts	13,361	2,746	10,615	21	10
Law	1,457	986	471	68	1
Social sciences (f)	23,957	6,604	17,353	28	18
Others (g)	1,946	286	1,660	15	1
Total	135,592	37,033	98,559	27	100

Source: Teaching Faculty in Universities and Four-year Colleges, Spring 1963, pp.62 and 63 (US Office of Education).

- Notes:
- (a) Mathematics and physics.
 - (b) Engineering Schools.
 - (c) Biology and health.
 - (d) Foreign languages, philosophy, psychology, religion and theology, English and journalism.
 - (e) Education and physical education.
 - (f) Commerce, social sciences.
 - (g) Domestic economy.
 - (h) Associate professors, assistant professors, instructors and others.

In 1962-63 the breakdown of teachers by sex was as follows:

Table D
 Distribution of teachers by sex and level, 1962-63

	Absolute figures	Percentages	Holders of doctorates		Women teachers	
			Nos	%	Nos	%
Professors	37,512	27.1	29,108	78	2,932	8
Associate professors	32,840	23.8	20,105	61	4,959	15
Assistant professors	40,361	29.1	16,908	42	8,341	21
Instructors	22,430	16.1	2,159	10	6,548	29
Others	5,060	3.9	1,669	33	1,863	37
Total	138,203	100	69,949	51	24,643	18

Source: Teaching Faculty in Universities and Four-year Colleges, Appendix C, table I, (US Office of Education).

The reader will note that the total figure for teachers in 1962-63 (138,203) is much below the figure indicated in table I in annex. The differences are, of course, partly due to the exclusion of the two-year colleges from the figures, but also to the omission of certain other higher educational institutions which may be deemed important.

Another breakdown by sex is available for Autumn 1966 for almost the whole teaching staff in higher education (see table E).

Table E
Distribution of teachers by sex and level in 1966-67

Grades	All levels				Of whom doctors		
	Total	Men	Women	% of women	Men	Women	% of doctorates in each grade
Dean	4,036	3,679	357	9	2,662	202	71
Professor	65,642	59,730	5,912	9	46,136	4,195	73
Associate professor	59,724	50,811	8,913	15	31,153	3,547	58
Assistant professor	84,727	67,967	16,760	20	29,011	3,818	39
Instructor	67,085	45,166	21,919	33	2,440	766	5
Other	20,571	14,895	5,676	28	2,697	640	16
Total	301,785	242,248	59,537	20	114,099	13,168	42

Source: Number and Characteristics of Employees in Institutions of Higher Education, Fall 1966 (Office of Education).

It can be seen from the above table that, in 1966:

- women teachers constituted approximately 20 per cent of the whole, but only 9 per cent of the professors and deans;
- among deans and professors, the percentage of men holding doctorates was 77 per cent, the percentage of women 70 per cent.

2. Proportion of part-time teachers

Among the category of instructors and above who represent 93 per cent of the total teaching staff assigned to courses leading to at least a degree-credit, the number of part-time teachers (in "physical" terms) has a little more than doubled between 1955 and 1967. Their proportion to the total number of teachers in the group under consideration has remained at one-third. On a full-time basis, part-time teachers have increased from 11 to 13.9 per cent of the total number of teaching staff under consideration.

IV. Conclusions

Although the numbers in the different categories of teachers have increased very rapidly between 1955 and 1967, their quantitative growth has been less than that of students. The great flexibility in criteria for recruitment among the different categories of staff has certainly helped avoid an even greater widening of the student/teacher ratio though it is considered here only from a quantitative angle and therefore we naturally cannot draw definite conclusions.

ANNEX I
Table I

FULL-TIME AND PART-TIME INSTRUCTIONAL STAFF IN ALL INSTITUTIONS OF HIGHER EDUCATION BY LEVEL

(1955-56 - 1967/68) (a)

YEAR	RESIDENT DEGREE - COURSES				OTHER INSTRUCTIONAL STAFF (b)				TOTAL	
	INSTRUCTOR OR ABOVE		JUNIOR INSTRUCTIVE STAFF		TOTAL		ABSOLUTE FIGURES			
	ABSOLUTE FIGURES	INDEXES	FULL-TIME	PART-TIME	ABSOLUTE FIGURES	INDEXES	ABSOLUTE FIGURES	INDEXES		
1955/56	197,791	100	135,000	53,000	30,138	100	227,929	100	48,009	
1956/57	217,000	110	148,000	69,000	33,000	109	250,000	110	51,000	
1957/58	224,930	114	153,150	71,780	33,918	112	256,848	114	52,316	
1958/59	237,000	120	160,000	77,000	36,000	119	272,000	119	55,000	
1959/60	240,914	122	162,292	80,622	38,592	128	281,505	123	56,481	
1960/61	253,000	128	169,000	84,000	42,000	139	294,000	129	56,000	
1961/62	264,749	134	177,052	87,697	46,023	153	310,772	136	56,106	
1962/63	285,000	144	190,000	95,000	49,000	163	334,000	147	61,000	
1963/64	302,896	153	202,396	100,500	52,846	175	355,542	156	66,307	
1964/65	329,000	166	220,000	109,000	56,000	192	387,000	170	73,000	
1965/66	363,000	184	243,000	120,000	64,000	212	427,000	187	83,000	
1966/67	382,000	193	255,000	127,000	67,000	222	449,000	197	86,000	
1967/68	405,000	205	271,000	135,000	72,000	239	478,000	210	95,000	
									207	

Source : Projection of Educational Statistics to 1975/76
 Projection of Educational Statistics to 1976/77
 Projection of Educational Statistics to 1977/78 { U.S. Department of Health, Education and Welfare, Office of Education,
 National Center for Educational Statistics.

Notes : (a) Because of rounding, detail may not add to totals.
 (b) Instructional staff for extension, resident non-degree-courses, and instruction by mail, radio or T.V., short courses and individual lessons.

Table I bis
FULL-TIME EQUIVALENT INSTRUCTIONAL STAFF IN ALL INSTITUTIONS OF HIGHER EDUCATION BY LEVEL
(1955/56 - 1967/68) (a)

YEAR	INSTRUCTOR OR ABOVE			RESIDENT DEGREE COURSES		TOTAL FULL-TIME EQUIVALENT		OTHER INSTRUCTIONAL STAFF (b)		TOTAL FULL-TIME EQUIVALENT INSTRUCTIONAL STAFF		
	TOTAL FULL-TIME EQUIVALENT		FULL-TIME	PART-TIME	Absolute Figures	Indexes	Absolute Figures	Indexes	Absolute Figures	Indexes	Absolute Figures	Indexes
	Absolute Figures	Indexes										
1955/56	151,322	100	135,000	17,000	10,000	100	161,322	100	34,000	100	195,000	100
1956/57	169,000	112	148,000	21,000	11,000	110	180,000	112	36,000	106	216,000	111
1957/58	176,042	116	153,150	22,892	11,000	110	187,042	116	37,000	109	224,000	115
1958/59	182,000	120	160,000	22,000	12,000	120	194,000	120	39,000	115	233,000	119
1959/60	187,850	124	162,292	25,558	13,000	130	200,850	124	40,000	118	241,000	124
1960/61	196,000	130	165,000	27,000	14,000	140	210,000	130	40,000	118	250,000	128
1961/62	206,553	136	177,052	29,501	15,000	150	221,553	137	40,000	118	261,000	134
1962/63	221,000	146	190,000	31,000	16,000	160	237,000	147	44,000	129	281,000	144
1963/64	235,013	155	202,396	32,617	17,000	170	252,013	156	47,000	138	299,000	153
1964/65	256,000	169	220,000	36,000	19,000	190	275,000	170	52,000	153	327,000	168
1965/66	232,000	186	263,000	40,000	21,000	210	303,000	188	59,000	174	362,000	186
1966/67	297,000	196	255,000	42,000	22,000	220	319,000	196	62,000	182	382,000	196
1967/68	316,000	209	271,000	44,000	24,000	240	339,000	210	67,000	197	407,000	209

Source : See Table I.

Notes : (a) See note (a) Table I.
(b) See note (b) Table I.

Table II

Total full-time and part-time enrolments (a) in all institutions of higher education
(1955 - 1967) (b)

Year (Fall)	Degree-credit			Non-degree-credit			All students		
	Total		Full-time	Total		Full-time	Part-time	Total	
	Absolute figures	Index- es		Absolute figures	Index- es			Absolute figures	Index- es
1955	2,660,000	100	1,857,000	803,000	151,000	100	60,000	91,000	2,811,000
1956	2,928,000	110	2,020,000	908,000	168,000	111	67,000	101,000	3,095,000
1957	3,047,373	114	2,077,000	970,000	176,000	117	73,000	103,000	3,224,000
1958	3,236,414	121	2,215,000	1,022,000	184,000	122	76,000	108,000	3,420,000
1959	3,377,273	127	2,314,000	1,063,000	194,200	129	80,000	114,000	3,571,000
1960	3,582,726	135	2,466,000	1,117,000	206,000	136	85,000	121,000	3,789,000
1961	3,860,643	145	2,714,000	1,147,000	186,483	123	77,000	109,000	4,047,000
1962	4,174,936	157	2,902,101	1,272,835	229,000	152	95,000	134,000	4,904,000
1963	4,494,626	169	3,068,469	1,426,157	271,241	180	112,000	159,000	4,766,000
1964	4,950,173	186	3,417,796	1,532,377	329,847	218	137,000	193,000	5,280,000
1965	5,526,325	208	3,910,848	1,615,477	394,539	261	163,000	251,000	5,921,000
1966	5,885,000	221	4,230,000	1,655,000	505,000	334	208,000	296,000	6,390,000
1967	6,348,000	239	4,560,000	1,788,000	564,000	374	233,000	331,000	6,912,000

Source: Projections of Educational Statistics to 1975-76
Projections of Educational Statistics to 1976-77
Projections of Educational Statistics to 1977-78

US Department of Health, Education and Welfare, Office of
Education, National Center for Educational Statistics.

Notes: (a) Resident and extension enrolment; does not include: 1) adult education (degree-credit or non degree-credit courses);
2) degree-credit and non degree-credit courses by mail, television or radio;
3) short courses;
4) individual lessons only.

(b) See note (a) table I.

Table II bis

Full-time equivalent of total full-time and part-time enrolments (a) in all institutions of higher education
 (1955 - 1967) (b)

Year (fall)	Degree-credit		Non-degree-credit		All students	
	Total	Indexes	Total	Indexes	Total	Indexes
1955	2,122,000	100	86,000	100	2,208,000	100
1956	2,319,000	109	96,000	112	2,415,000	109
1957	2,397,000	113	102,000	119	2,499,000	113
1958	2,552,000	120	106,000	123	2,658,000	120
1959	2,665,000	126	112,000	130	2,777,000	126
1960	2,835,000	134	119,000	138	2,954,000	134
1961	3,092,000	146	108,000	126	3,200,000	145
1962	3,322,000	156	133,000	155	3,455,000	156
1963	3,539,000	167	157,000	183	3,696,000	167
1964	3,924,000	185	191,000	222	4,115,000	186
1965	4,443,000	209	228,000	265	4,671,000	212
1966	4,776,000	209	292,000	340	5,068,000	229
1967	5,150,000	243	326,000	379	5,476,000	248

Source: See table II.

Notes: (a) Resident and extension enrolment.
 (b) See note (a) table I.

FRANCE

I. Criteria for the recruitment and promotion of teaching staff in university type institutions

The "Loi d'orientation de l'enseignement supérieur" (Outline Act on Higher Education) passed in 1968 will involve changes in the criteria for recruiting teaching staff as and when it is applied. The French Ministry of Education is at present working on a new charter for teaching staff in higher education. A single body will be created with a graded structure ranging from "assistants" to "professeurs". Pending the publication of the new charter, various steps have been taken to ease the direct or indirect conditions for the recruitment of teaching staff. The "Doctorat d'Etat", an essential condition for appointment to the top posts in the Faculties of Humanities or Sciences, can now be awarded to candidates who submit a body of individual work, or - and this is a striking innovation - team work, or, naturally, a thesis (which need no longer be supported, as previously, by a complementary thesis).

Whereas, previously, a professor could not be appointed to a Faculty unless he held a Doctorat d'Etat in the corresponding Faculty, the creation of multi-disciplinary universities, and even the prospective replacement of the traditional Faculties by research and teaching units, has led the authorities, pending the publication of a new charter for the teaching staff, to rule that the holder of a Doctorat d'Etat may be assigned to any Faculty, regardless of the Faculty in which his doctorate was conferred. Annex I gives a detailed table of the level of specialisation required of each level of teacher in the five traditional Faculties (Humanities and Social Sciences, Law and Economics, Science, Medical Sciences, Pharmacy). Very often, an academic career begins with a post of "assistant". "Assistants" and "maîtres assistants" in the Faculties of Humanities and Sciences are largely recruited from secondary school teachers who have passed the highest competitive recruitment examination for that grade, the secondary "agrégation". Since most "agrégés" have qualified from a Teacher Training College (and not from a University Faculty), which they have entered by competitive examination, they very soon become members of the higher education teaching staff. A Science Faculty, in particular, may, however, appoint as "assistant", the holder of a Master's degree ("maîtrise"), awarded after four years of higher education. There is very little mobility among university teaching staff. Furthermore, until recently there were very few teachers without the officially required qualifications or foreign teachers, since their status as "professeurs associés" was hardly attractive (annual contracts, obligation to teach full time, etc.). Following the change of heart which inspired the Outline Act "professeurs associés", whether French or foreign, will have a more stable situation (two-year contracts, indefinitely renewable) socially and economically identical with that of established staff of the same grade, as well as being able to teach part time only. "Professeurs associés", however, may not amount to more than 5 per cent of established staff. Finally, still with the same idea of bringing the universities closer into line with the real needs of training, university institutions are now free to recruit, within the limits of their available appropriations, (the salaries of the other teachers mentioned above being borne by the State), qualified staff to meet their special needs, who need not necessarily be French nationals or hold specified university degrees. (1)

(1) Source: Educational Policy and Planning - France, OECD, Paris (to be published in 1971).

II. Trend of numbers of university teachers and students

The available statistics allow the quantitative trend to be analysed for university teachers only. As a general rule only the public universities are taken into account. A substantial proportion of students in the (private) Catholic Faculties are also enrolled in the State Faculties which are alone authorised to grant recognised degrees. In 1958-59, 7,269 students out of a total of about 13,000 enrolled in the Catholic Faculties were in this position. Although they generally attend the classes of teachers who are not included in our statistics, their percentage of the total number of students is so small that the margin of error which they introduce into this study may be regarded as negligible.

1. Student/teacher ratios and numbers

The figures used as a basis for tables I and II in annex have been taken from the monthly statistical bulletins of the Central Statistical Service of the Ministry of Education and, in particular, from the reports published by the Documentation and Information Bureau of that Service.

The following student/teacher ratios for the period 1957-1967 (table A) have been calculated on the basis of the numbers shown in those tables.

Table A

Student/teacher ratios in 1957 and 1967 by level
of teaching staff (university-type higher education)

Field of study		S/SL	S/ML	S/JL	S/SI+ML	S/total
Pure science	1957	170.4	127.5	44.5	72.9	27.6
	1967	209.5	101.9	17.5	68.6	13.9
Medical sciences	1957	53.7	70.5	47.3	30.5	18.5
	1967	90.1	50.1	15.1	32.2	10.3
Humanities and social sciences	1957	188.9	174.5	197.0	90.7	62.1
	1967	416.7	213.7	60.2	141.3	42.2
Law and economics	1957	128.8	258.5	256.5	86.0	64.4
	1967	261.8	298.4	103.4	139.5	59.4
Average ratios	1957	112.8	127.1	73.3	59.8	32.9
	1967	207.9	118.2	28.4	75.4	20.6

2. Annual average growth rates of university enrolments 1957-1967

These rates, calculated from tables I and II in annex II, are summarised in table B below:

Table B

Annual average growth rates in numbers of teachers and students in university higher education, by field of study and level of teaching staff (1957-1967)

(in percentages)

Field of study	Teaching staff				Students
	SL	ML	JL	Total	
Pure science	7.5	12.0	20	17.2	9.4
Medical sciences	2.0	11.2	21	14.0	7.5
Humanities and social sciences	4.0	10.4	27	17.1	12.7
Law and economics	4.2	10.2	22	12.7	11.8
Total	4.0	11.3	22	15.8	10.6

The preceding table shows that the percentage increases in middle or junior level staff in general and in pure science and medical sciences in particular exceeded the corresponding percentage increases in student numbers. In the humanities, law and social sciences, it was only the very important role played by junior level teaching staff that enabled the overall growth rate in numbers of teachers to outpace the very rapid rise in numbers of students.

3. Structural changes in the teaching staff by field of study

These changes are summarised in table C below.

This table clearly shows the steep decline in the percentages of senior and middle level staff in the various fields, and the consequent large increase in the percentage of junior level teachers. Senior level staff showed the lowest rate of growth, except in science faculties.

Table C

Structural changes in the university teaching staff as a whole

(as percentage of total staff)

Field of study		SL	ML	JL
Science	1949/50	11.8	31.2	57.0
	1957/58	16.2	21.6	62.2
	1967/68	6.7	13.7	79.6
Medical sciences	1957/58	34.5	26.3	39.2
	1967/68	11.4	20.6	68.0
Humanities and social sciences	1949/50	43.8	30.3	25.9
	1957/58	32.9	35.6	31.5
	1967/68	10.1	19.8	70.1
Law and economics	1957/58	50.0	25.0	25.0
	1967/68	22.7	19.9	57.4
Others	1967/68	1.7	14.7	83.6

III. Composition of teaching staff in university-type higher education

In 1961 there were 16 universities in France. In 1967 the number had risen to 23. To meet the growing demand for teachers and auxiliary staff and to cope with basic chronic shortages, various types of teachers were called on. The Ministry of Education stated that "the teacher shortage primarily affects the humanities and law at 'maîtres de conférence' level."

"It takes almost ten years to prepare a doctoral thesis for presentation at a State university, and university staffing requirements grow faster than the awards of doctorates during this period."

"The same is true of the law faculties, where the annual 'concours d'agrégation' do not provide enough candidates to fill the vacancies."

"Although the overall situation is better in the science faculties, it still remains difficult in mathematics and in certain subjects taught in the university institutes of technology: chemical engineering, civil engineering, data processing and mechanical engineering."

"Staffing requirements in these subjects have increased substantially in recent years, whereas possibilities of recruiting qualified teachers have remained limited" (1).

1. Percentage of unqualified teachers

Teachers who do not have the requisite qualifications for the posts they hold are classified as "unqualified". They must, however, have given proof of their teaching ability, or have published works on the basis of which they have either been entered on the official register ("liste d'aptitude") of persons qualified to teach in higher education (in the case of staff holding posts as "professeur" or "maître de conférence"), or have been appointed as "délégués" to carry out the duties of "maître-assistant". About 15 per cent of "professeurs" and "maître de conférence", and about 30 per cent of "maîtres-assistants" are unqualified in this sense.

However, the figures in the preceding tables clearly show that the number of university teachers has increased faster than the number of enrolments. Thus, although shortages still exist, they are being reduced, at any rate in strictly quantitative terms.

2. The expanding role of "assistants" in meeting the increase in staffing requirements

Since 1960, the relatively rapid growth of the French university teaching body was achieved mainly by recruiting junior level teachers, especially "maîtres-assistants" (2). The role of "assistants" and "maîtres-assistants" from the ranks of secondary school teachers seems to have declined. This implies that "young teachers beginning a university career have rarely had any teacher training (3), although they may hold excellent qualifications in their specialised fields".

(1) Answers to "complementary questions", item 2.

(2) In this connection, see Section II (2): Annual average growth rates in numbers of teachers by field of study.

(3) Since the courses preparing candidates for the competitive examination of "agrégation" for teaching posts in secondary education do not include any real training in teaching [except for the minority of agrégés who have prepared for this examination in an "école normale supérieure" (higher teachers' training college) who receive a better initiation into problems of teaching their special subject], the training in teaching referred to here can only have been acquired "on the job" in secondary schools.

3. Extent to which teaching loads have increased

Table D below (Ministry of Education report for 1967) clearly shows the extent to which teaching loads have increased as a result of staff shortages.

"This table shows the number of hours of overtime done by teachers in 1967-68. About half the hours for theoretical courses and a quarter of those for practical courses are done by "professeurs" and "maîtres de conference". The rest are done by "maîtres-assistants", "professeurs du second degré", or other individuals who are highly qualified in their profession but are not members of university staffs".(1)

Table D

Additional teaching loads (in hours) in the academic year 1967-68

	Theoretical courses	Directed study and practical work
Law and economics faculties	45,825	51,900
Humanities and social science faculties	49,525	148,475
Science faculties	67,575	78,425
Faculties of medicine and pharmacy	17,500 (a)	17,575 (a)
Political science institutes (b)	5,375	8,275
Business management institutes	7,075	10,950
University institutes of technology	13,925	70,200
Advanced vocational training institutes (c)	16,375	7,750
Engineering schools (d)	26,025	2,900
Other institutes	38,400	36..00

Source: Ministry of Education. Answers to "complementary questions".

Notes: (a) Outside Paris only - No overtime is necessary in Paris.

(b) Outside Paris only - The "Fondation nationale des sciences politiques" in Paris has its own independent budget.

(c) Outside Paris only - In Paris this training is provided by the "Conservatoire national des arts et métiers".

(d) Outside Paris only and in schools with the status of institutes, faculties or universities.

4. Part-time teachers

No breakdown between part-time and full-time teachers could be made from the data available.

It has, however, been ascertained from the answers to the "complementary questions" that: "Table I in annex covers all teachers both full-time and part-time.

"It should be noted, however, that part-time teachers are found only in faculties of medicine. They are registered practitioners not integrated when the teaching hospitals were reformed, and who thus have only teaching duties in the university.

(1) Answers to "complementary questions", item 5.

"This category covers 30 per cent of the "professeurs" and 20 per cent of the "maîtres de conférence" in medical faculties, i.e. 256 "professeurs" and 200 "maîtres de conférence".

"The legislation governing the reform of the teaching-hospital system states that any member of the staff of a teaching hospital shall divide his time between teaching, practising medicine, and research, or must be able to consider teaching as accounting for about one-third of his normal activity."

5. Part played by women teachers

In its answers to the "complementary questions", the French Ministry of Education provides details on the percentages of women teachers currently employed in higher education, and this information is summarised in table E below.

It was pointed out that:

"1) As the administration of "assistants" is decentralised (science, medical sciences, pharmacy), percentages could not be established for this category of teachers."

"2) The department has no statistical data that would enable it to ascertain the percentage increase in women teachers in higher education. However, it can be assumed that the proportion has been increasing since 1945." (1)

Table E

Percentages of women teachers currently employed in university
higher education

Categories Faculties	Professeurs	Maîtres de conférence	Maîtres-assistants		Chefs de travaux	Assistants
			1st class	2nd class		
Humanities	7	11	20	29		38
Law	3	8	32	30		30
Sciences	4	13	28	21		
Medical sciences and pharmacy	1	3			29	

IV. Conclusions

The number of teachers has increased faster than the number of enrolments. Student/teacher ratios, which were very high at the beginning of the period, have decreased appreciably in all fields. During the period in question they were cut by almost one-half in science and medical sciences and by about one-third in the humanities and social sciences.

The improved student/teacher ratio in all fields of study is largely due to the fast rate of increase in the number of junior level teachers, whereas the number of senior level staff increased far more slowly than that of students in all cases. In 1967-68 the overall student/teacher ratio was still high, since it averaged around 21 for university education as a whole.

(1) Answers to "complementary questions".

ANNEX I

Levels of specialisation of teachers

(Answers to the "complementary questions" provided by the Ministry of Education).

Assistants

Faculties of law and economics

In theory

Unspecified

In practice

At least a "licence" in law or economics (1)

Faculties of medicine

"Docteur en médecine"

idem.

Science faculties

"Licence ès-sciences" (2) with the necessary certificates qualifying holders to study for a "doctorat d'Etat"; holders of a "diplôme de docteur-ingénieur" (3); engineers (3) with the necessary certificates qualifying holders to study for a "diplôme de docteur-ingénieur".

"agrégés de l'enseignement du second degré"; "docteurs d'Etat", "docteurs du 5ème cycle", holders of a "licence" who also have engineering qualifications, or the DES (4), DEA (5), CAFES (6), CAPET (6).

-
- (1) Course of study lasting four years.
 - (2) The "licence ès-sciences" or "ès-lettres" takes at least three years of study.
 - (3) The degree of "ingénieur" usually takes five years (two years of preparation for the competitive examination for entrance into the "école d'ingénieurs" and three years for the "diplôme d'ingénieur". At least one more year of study in the faculty is required to obtain the "diplôme de docteur-ingénieur".
 - (4) The "diplôme d'études supérieures" used to take one year of study (after three years for the "licence ès-sciences" or "ès-lettres"), and qualified the holder to prepare for the competitive examination of "agrégation de l'enseignement du second degré". This diploma was abolished in 1966, a "maîtrise en lettres" or "en sciences" requiring four years of study having been introduced as an alternative to the three-year "licence" course. The "maîtrise" qualifies its holder to sit for the "agrégation".
 - (5) The "diplôme des études approfondies", the first phase of initiation into research for the "doctorat de troisième cycle", which begins after the "maîtrise".
 - (6) The "certificat d'aptitude au professorat de l'enseignement secondaire", a competitive examination taken after one year of study after the "licence". Candidates obtaining the "licence" do a one-year practical training course, after which they are awarded a "certificat d'aptitude".

Faculties of humanities

"Licence ès-lettres" (1) and the DES (2) or equivalent or higher qualifications, or graduates from the "école nationale des langues orientales vivantes", and the "école pratique des hautes études", or holders of a "doctorat d'université" in the humanities.

idem. or "agrégés de l'enseignement du second degré".

Chefs de travaux pratiques

Faculties of pharmacy and medicine

"Docteurs en pharmacie", "docteurs ès-sciences", "docteurs en médecine" or "assistants titulaires" who have taught at this level for at least three years and have been officially recognised as qualified to give this type of instruction (name entered on one of the "listes nationales d'aptitude").

idem.

Maitres-assistants

Faculties of law and economics

"Docteurs en droit, sciences économiques ou politiques" who have worked as "assistants" or "chefs de travaux pratiques" for at least two years, or have been teaching on the basis of three hours per week and have been officially recognised as qualified to give this type of instruction (name entered on one of the "listes nationales d'aptitude").

idem.

Faculties of science, humanities and social sciences

"Docteurs ès-lettres", "docteurs ès-sciences", idem. "docteurs ingénieurs", "agrégés du second degré", "docteurs du 3ème cycle", "assistants" who have taught at this level for at least three years and have been officially recognised as qualified to give this type of instruction (name entered on one of the "listes nationales d'aptitude").

(1) See note (2) on previous page.

(2) See note (4) on previous page.

Maîtres de conférence

Faculties of law and economics

"Agrégation de droit" (1) idem.

Faculties of humanities, human sciences and science

"Doctorat d'Etat" and official
recognition as a qualified higher
education teacher (name entered
on the "liste d'aptitude" known as
the "restricted list".

Faculties of medicine and pharmacy

Agrégation de médecine (1) idem.

Agrégation de pharmacie (1) idem.

Professeurs titulaires

Recruited:

- either from "maîtres de conférence"
or "maîtres de conférence agrégés"
who have taught at this level for at
least two years;
- or from holders of the "doctorat
d'Etat" who have taught for at least
two years in a higher educational
establishment. The second case is very rare.

(1) This "agrégation" is a competitive recruiting examination for teaching at the highest levels in the three faculties concerned. Candidates sitting for this examination are usually older than those taking the "agrégation de l'enseignement du second degré" (humanities or sciences). This is explained by the fact that the diplôme required for teaching at the highest levels in the humanities and science faculties is the "doctorat d'Etat", for which candidates do not require to have sat the "agrégation de l'enseignement du second degré". But for the faculties of medicine, pharmacy, and law and economics, the "agrégation" is a necessary qualification for teaching at the highest levels.

ANNEX III

Table I

TEACHING STAFF BY STATUS AND FIELD OF SPECIALISATION IN UNIVERSITY INSTITUTIONS
(FULL-TIME AND PART-TIME) (a)

SL = Professors
ML = Lecturers and readers
JL = Assistant Teachers, Assistants

Field of specialisation Year	PURE SCIENCE			MEDICAL SCIENCES			HUMANITIES AND SOCIAL SCIENCES			LAW AND ECONOMICS			OTHER (I.U.T.) (b)			TOTAL						
	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T		
1949/50	194	509	928	1,631					224	115	132	511	22	41	—							
1957/58	312	417	1,196	1,925	717	545	813	2,076	266	288	255	809	261	130	131	522			1,556	1,381	2,395	
1960/61	394	674	2,564	3,632	749	638	1,015	2,402	293	360	497	1,150	285	192	240	717			1,721	1,864	4,316	
1961/62	425	742	3,246	4,413					3,830	300	386	685	1,371	294	200	293	787					10,401
1962/63	468	796	3,961	5,225	749	1,149	2,708	4,605	309	429	864	1,602	310	220	364	894			1,856	2,594	7,897	
1963/64	498	878	4,731	6,107	835	1,278	3,798	5,912	330	502	1,138	1,970	330	251	528	1,109					12,327	
1964/65	532	938	5,466	6,936	831	1,406	3,998	6,235	336	556	1,520	2,412	337	273	669	1,279			1,993	2,909	10,195	
1965/66 (c)	560	1,074	6,375	8,009	850	1,490	4,225	6,565	348	608	1,768	2,724	356	298	772	1,426			2,036	5,173	14,653	
1966/67 (d)	583	1,147	6,737	8,467	848	1,525	4,668	7,041	373	675	2,184	3,232	365	314	863	1,542	1	22	68	91	2,170	
1967/68	626	1,287	7,496	9,409	878	1,578	5,226	7,682	396	772	2,739	3,907	392	844	993	1,729	76	962	353	422	2,299	
																					23,149	

Source: Ministry of Education "Informations statistiques" and "Service central des statistiques et de la conjoncture" Office of documentation and information.
Notes : (a) Associate teachers, foreign lecturers in humanities, staff responsible for practical work in law, monitors and staff in "grands établissements"
in higher education are not included.

(b) Instituts universitaires de technologie.

(c) Breakdowns of total enrolments in 1965/66 and 1966/67 have been provided by "Notes rapides d'information" No. 17-1968.

(d) These figures concern general total, I.U.T. excluded.

(e) The figures come from "Service central des statistiques et de la conjoncture".

Table I b1s

TEACHING STAFF BY STATUS AND FIELD OF SPECIALISATION IN UNIVERSITY INSTITUTIONS
(FULL-TIME AND PART-TIME)

Field of specialisation	PURE SCIENCE			MEDICAL SCIENCES			HUMANITIES AND SOCIAL SCIENCES			LAW AND ECONOMICS			TOTAL					
	SL	ML	JL	TOTAL	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T		
1949/50	62	122	72	85	100				84	54	52	63		100	84	32		
1957/58	100	100	100	118	100	100	100	100	100	100	100	100	100	100	100	100	100	
1960/61	126	162	214	188	222	104	117	125	116	110	125	195	142	100	109	148	183	137
1961/62	136	178	271	230	271				184	113	134	269	169		113	154	224	151
1962/63	150	191	331	271	320	104	210	333	222	116	149	359	198		119	169	278	171
1963/64	160	211	396	317	374	116	234	467	285	124	174	446	243		126	193	403	212
1964/65	171	225	457	360	425	116	258	492	300	126	193	596	298		129	210	510	245
1965/66	179	250	533	416	491	119	273	520	316	131	211	693	337	237	136	229	569	275
1966/67	177	275	563	440	519	118	279	574	339	140	234	856	399		632	140	242	659
1967/68	201	309	627	489	577	122	289	643	370	149	268	1,074	483		150	265	758	351

Source and notes: See e. o. table I.

Table II

Student enrolments in university institutions

Field of special- isation Year	Pure science		Medical sciences		Humanities and social sciences		Law and economics (a)		Total		Total en- rolled and un- register- ed st.
	Total	Indexes	Total	Indexes	Total	Indexes	Total	Indexes	Total	Indexes	Total
1957/58	53,177	100	38,469	100	50,245	100	33,609	100	175,500	100	
1958/59	60,063	113	39,090	102	54,383	108	32,565	97	186,101	106	
1959/60	65,506	123	39,389	102	57,395	114	32,473	57	194,763	111	
1960/61	68,062	128	39,284	102	62,395	124	33,634	100	203,375	116	214,672
1961/62	75,282	142	45,503	118	73,376	146	38,449	114	232,610	133	244,814
1962/63	88,595	167	47,91	125	88,734	177	45,468	135	270,788	154	282,222
1963/64	100,498	189	50,557	131	103,484	206	53,650	160	308,189	176	326,311
1964/65	109,628	206	55,159	143	119,017	237	65,131	194	348,935	199	367,701
1965/66	121,539	229	61,790	161	133,216	265	77,114	229	393,659	224	413,756
1966/67	124,721	235	67,720	176	152,916	304	88,030	262	433,387	247	459,470
1967/68	131,164	247	79,100	206	164,998	328	102,642	305	477,904	272	508,119

Source: Monthly publications: "Informations statistiques du Ministère de l'Education nationale".

Notes: (a) These totals include students of "capacité en droit" who are not university-type students.

GREECE

I. Criteria for the recruitment and promotion of teaching staff

The teaching staff at the Greek universities of Athens and Thessalonika consist of established professors, assistant professors, senior lecturers, lecturers, research supervisors in laboratories and clinics, auxiliary teaching staff, assistants and demonstrators. All senior level teaching staff and research supervisors must have a doctorate (1). To be appointed to a chair in an institute of higher education, a candidate must hold the degree of doctor in the special subjects of the chair, and he must also be the author of published works representing an original contribution to knowledge. An assistant professor (teaching in his own right or as an assistant to an established professor) is, for preference, chosen from among those qualified for professorship.

"To be appointed to a post as senior lecturer (lecturer under the authority of an established professor), a candidate must be qualified: that is to say, in addition to holding a doctorate in the subjects concerned, he must have published a qualifying thesis in the course of a career devoted entirely to teaching, representing an original contribution to knowledge in the special subject he will be called upon to teach. He must also have passed an oral examination on his thesis before a board of professors." Research supervisors are doctors of medicine (1).

Professors are elected by the assembly of established professors. Other staff are appointed by the faculty after proposal by the professor concerned. Staff appointed for a determined period are allowed to engage in activities outside the university if certain statutory conditions are satisfied.

II. Trends in numbers of teachers and students in higher education

A. University education

1. Student/teacher ratios and numbers

The total numbers of university teachers and students are shown in tables I and II in the annex. It has not been possible to include junior level staff in these statistics and this considerably limits their significance.

It would appear that the student/staff ratios in the university sector have considerably increased during the period under review. Taking account of the available statistics, caution must be taken in attempting to compare trends in Greece with those in other countries. The only comparisons likely to be significant at international level are those relating to senior and middle level staff.

For a limited period, however, (1955-61) an estimate of the trends of student/teacher ratios is available. It seems to concern the whole teaching body in higher education (2) and is shown in Table B. Except for the faculties of fine arts and social sciences (where the ratio is very high) the number of students per teacher increased between 1955 and 1961.

(1) Some of these data are provided by the answers to the "complementary questions".

(2) It is specified on page 172 of the MRP Report/Greece (OECD, 1965) that assistants are included in the quoted figures.

Table A

Student/teacher ratios by field of study and level of staff
(senior and middle level only) 1955 - 1966

Field of study		Student/SL	Student/ML	Student/SL+ML
Pure science and pharmacy	1955	41.5	141.3	32
	1966	103.4	376.1	81.1
Technology and architecture	1955	19.8	34.4	13
	1966	59.2	86.8	55.4
Medical sciences	1955	45.8	26.4	17
	1966	107.6	35.3 (1965)	78.1
Agriculture	1955	9	59.3	8
	1966	47.4	63.6 (1965)	42.7
Humanities	1955	36.1	154.9	29
	1966	92.2	360	73.4
Fine arts	1955	10.5	-	11
	1966	1.4	27.4	14.2
Law	1955	79.6	87.5	63
	1966	17.5	238.8	101.1
Social sciences	1955	59.1	4,552	58
	1966	245.8	1,597.8	213
Total	1955	38.6	76.6	26
	1966	119.6	140 (1965)	(64.2 - 1965)

Source: Tables I and II in annex, official Greek statistics for higher education and Ministry of Co-ordination.

It appears that in general, the supply of teachers is poor, the main reason being poor salaries and conditions of work (1).

(1) MRP Report/Greece, OECD, Paris, 1965, p.79.

Table B
 Trends in student/teacher ratios in university
 education from 1955 to 1961

Field of study	Number of professors		Student/teacher	
	1955	1961	1955	1961
Pure science (a)	89	140	6	22
Technology	129	185	9	13
Medical sciences (b)	182	295	13	14
Agriculture (c)	94	130	7	9
Humanities (d)	86	104	26	31
Fine arts	8	12	15	9
Law	71	70	39	58
Social sciences (e)	74	140	57	57
Total	733	1,076	19	24

Source: Data based on tables 32 and 64 of MRP Report/Greece, OECD, Paris, 1965.

Notes: (a) and pharmacy.
 (b) and dentistry.
 (c) and veterinary medicine.
 (d) faculties of philosophy and theology.
 (e) faculties of economics and commerce, industrial studies and political science.

2. Average annual growth rates in university staff and student numbers between 1955 and 1966

These rates are shown in table C.

Table C
 Annual growth rates in universities, 1955-1966
 (in percentages)

Field of study	SL	Teachers	Total SL+ML	Students
		ML		
Pure science	4.2	3.6	4.1	13.2
Technology	2.6	-15.5	-0.9	13.4
Medical sciences	2.3	7.2 (a)	5.9 (a)	10.5 (c)
Agriculture	1	17.0 (a)	4.8 (a)	17.4 (d)
Humanities	1	2.0	1.2	10.1
Fine arts	1.7	10.8	4.9	2.4
Law	2.8	0.9	2.0	10.5
Social sciences	0.1		1.3	14.0
Total (b)	1.9	-4.2	0.2	12.9

Notes: (a) 1955-1965. There would be no point in calculating a growth rate for 1955-1956 owing to changes in statistical methods.
 (b) For the period 1955-1965 the rate of increase in the number of teachers of middle level was 6.4 per cent, while in the case of senior and junior level it was 3.1 per cent, and for students 12.3 per cent.
 (c) Rate for 1955-1965: 10.4 per cent.
 (d) Rate for 1955-1965: 17.8 per cent.

Table D

Structural changes in the composition of teaching staff
in higher education (university and non-university types)
(concerns only SL and ML)

(as percentage of total SL+ML teachers)

Field of study		SL	ML
Pure science and pharmacy	1955	77.3	22.7
	1966	78.4	21.6
Technology and architecture	1955	63.5	36.5
	1966	93.6	6.4
Medical sciences	1955	36.6	63.4
	1966	72.6	27.4
Agriculture	1955	86.8	13.2
	1966	90.1	9.9
Humanities	1955	81.1	18.9
	1966	79.6	20.4
Fine arts	1955	100.0	-
	1966	70.6	29.4
Law	1955	52.4	47.6
	1966	57.7	42.3
Social sciences	1955	98.7	1.3
	1966	86.7	13.3
Total university	1955	66.5	33.5
	1966	79.6	20.4
Education (non-university)	1955	100.0	-
	1966	-	-
Domestic economy (non-university)	1955	65.5	34.5
	1966	100.0	-

The differences in the growth rates for the various levels of teaching staff have led to structural changes in the university teaching body as a whole. However, as we are unable to estimate the proportion of junior level staff, it has seemed preferable to change the normal presentation of the surveys. The trend in the percentages for senior or middle level staff will therefore be found in table D but not figures for junior level staff.

B. Non-university type education

In teacher training colleges and in domestic economy institutions a number of estimates were available. They are summarised in tables I and II in annex. Some lessons can be drawn from them, which are presented in tables E and G on the student/teacher ratio and the annual growth rates.

Table E

Student/teacher ratios

S/SL + ML	Education		Domestic economy	
	1955/56	1966/67	1962/63	1966/67
	14.7	12.4	15.7	8.8

According to the "Mediterranean Regional Project - Greece", the number of students per teacher in teacher training colleges would have, on the contrary, increased between 1955 and 1961 as is seen in table F below.

Table F

Trends in numbers and student/teacher ratios in teacher training colleges 1955-61

	Number of teachers		Students/teacher	
	1955	1961	1955	1961
Teacher training colleges	141	160	11	14
Colleges of physical education	14	14	10	12

Source: Tables 32 and 64 of MRP Report/Greece (OECD, Paris, 1965).

Table G

Average annual growth rates of certain categories of teachers and students in non-university higher education

(in percentage)

Education					Domestic economy				
1955-1966					1962-1966				
SL	Teachers		Total	Students	SL	Teachers		Total	Students
	ML	JL				ML	JL		
2	-12.4	-	2.8	2	12.1	-	-	0.8	-12.7

It will be seen that, contrary to the situation in all the "university" fields, except fine arts, the student/teacher ratio fell during the period under review.

III. Composition of the teaching body

The answers to the "complementary questions" (1) show that there is a considerable shortage of teachers.

(1) Ministry of Co-ordination, Directorate General I, Directorate for Social Policy. (31st July, 1969).

"The shortage of teachers in higher education, apart from teacher training colleges, amounts at the present time to 40.7 per cent. In particular, in the Faculties of Science the shortage amounts to 45.2 per cent; in Polytechnics 44.5 per cent; in the Humanities and Theology 41.8 per cent; in Law 46.5 per cent; and in the Schools of Agriculture, Forestry and Veterinary Science, 24.6 per cent. In the Faculty of Medicine and the School of Dentistry the shortage amounts to 35.5 per cent. In the Schools of Political, Social and Economic Sciences, (the High School for Economic and Commercial Studies, and the High School for Political Studies, Pantios, the College of Advanced Industrial Studies, Piraeus, and the College of Advanced Industrial Studies, Thessalonika) the shortage is 47.8 per cent. Finally, in the Fine Arts School all teaching chairs are at present occupied.

"It is difficult to determine the exact causes of this shortage. We feel, however, that the main reasons are:

- (a) The fact that there is no system of post-university studies in Greece.
- (b) The brain drain, which affects high-level scientific personnel.
- (c) The fact that private enterprise offers better remuneration in Greece.

There are many indications at the present time that the number of teachers in higher education may shortly increase owing to the large number of young graduates who are returning from abroad."

In order to overcome the shortage the authorities responsible for higher education have sought various remedies.

1. Increase in the number of junior level teachers

The official statistics do not show the number of these teachers. This important method of helping to meet the needs cannot, therefore, be studied here.

Some indications were, however, given in answers to the "complementary questions" which give a very rough idea of the proportion of junior level teachers available to satisfy demand. These answers show that "the auxiliary teaching staff in higher education (lecturers, assistants and demonstrators) increased in 1967 to 1,578. There are 221 teachers at this level in the Science Faculties, 480 in the Polytechnic Schools, 415 in the Medical and Dentistry Faculties, 147 in the Schools of Agriculture, Forestry and Veterinary Science, 150 in the Faculties of the Humanities and Theology, 8 in the School of Fine Arts, 84 in the Faculty of Law, 68 in other high schools (Pantios, High School for Economic and Commercial Studies, the Schools for Advanced Industrial Studies) and 5 at teacher training colleges."

2. The part played by women teachers

The answers to the "complementary questions" showed that "in the course of the university year 1966-67 the proportion of women staff in higher education was inadequate. More precisely, in 1967 there were 30 women (15 professors and 15 lecturers) in higher education and 92 in teacher training colleges, i.e. 4.5 per cent and 31 per cent respectively. These percentages have not changed since 1955."

3. Part-time teachers and overtime

According to UNESCO (1) there were 150 part-time teachers in 1960-61 for a total teaching body of 705, i.e. about 21.3 per cent in "physical" terms.

(1) World Survey of Education, Volume IV.

The following information has been collected as regards the use of overtime to meet the shortage of staff.

It is not customary in Greece to pay teachers in higher education for any overtime they may do. But a teacher may receive permission to teach a subject other than his own in order to cope with a temporary staff shortage. Teachers thus employed are paid about 30 per cent of the ordinary salary of a university teacher.

In the course of the university year 1966-67 21 per cent out of an approximate shortage of 40 per cent in teaching staff was covered by the overtime system described above.

IV. Conclusions

The trend in the number of senior and middle level teachers in Greece is extremely disappointing (except in the fine arts) when compared with the trend in student enrolments. However, the absence of any information as to the way in which junior staff have helped to meet requirements makes these conclusions less pessimistic. The fact is that in many other countries where it has been possible to make a breakdown of the three levels of teachers it has been found that increased numbers of junior and sometimes middle level staff have sufficed to enable the total teaching body to increase at a rate approximating to the rate of increase in student enrolments.

Table I

TEACHING STAFF BY STATUS AND FIELD OF SPECIALISATION IN UNIVERSITY INSTITUTIONS AND IN A FEW INSTITUTIONS OF HIGHER EDUCATION OF NON-UNIVERSITY TYPE

SL : senior level
ML : middle level

Source : Higher Education Statistics - 1956/1965 and Ministry of Education Annual Reports.

Notes : (a) SL = Ordinary and extraordinary professors. WL : All teachers giving courses (paid or unpaid) and who are not included under SL.

- (D) Concerns teacher training schools, day nurseries & physical education.

(c) The increase is due to the opening of the University of Patras.

(d) From this year or only "Yohishitsu" who are giving comments

(e) From this year on only "Wiphigitis" who are giving courses are included. Previously all "Wiphigitis" were included even those who were not giving courses.

COUNTRY : GREECE
PAYS : GRECE
TABLE : I bis (Indexes)
TABLEAU : I bis (Indices)

Field of Specialization/ Branches	Year / Année	EDUCATION	Domestic Economy		TOTAL	
			SOCIAL SCIENCES		SCIENCE & TECHNOLOGY	
			Domestic Economy Féminine	Non univers- itaire	Université Non univers- itaire	Université et université non uni- versité.
1955/56	100	100	100	100	100	100
1956/57	97	102	99	99	106	101
1957/58	105	103	113	93	110	113
1958/59	106	67	126	92	120	110
1959/60	112	70	124	114	84	130
1960/61	121	73	134	117	84	120
1961/62	94	86	161	124	89	110
1962/63	92	78	165	134	106	110
1963/64	102	81	166	147	126	160
1964/65	117	83	173	162	133	160
1965/66	138	82	178	157	136	150
1966/67	155	90	65	107	114	170

Remark : Sources and remarks are the same as for Table I.
Remarque : Les sources et les notes sont les mêmes que celles du tableau I.

Table II

Student enrolments in university institutions and in a few
institutions of higher education of non-university type (a)

Field of spec- ialis- ation Year	Medi- cal sciences	Agric- ture	Hu- manit- ies	Education		Fine arts		Sci- ences (b)	Dom- estic econ- omy non- univ.	Uni- vers. & non- uni- vers.	Total	
				Uni- vers.	Non- uni- vers.	Total	Uni- vers.	Non- uni- vers.	Total			
1955/56	2,119	2,928	593	2,633	139	2,859	2,998	105		2,627	4,552	19,864
1956/57	2,044	1,450	2,427	740	3,043	118	2,507	2,625	113	3,252	4,714	20,408
1957/58	2,184	1,667	2,733	785	3,375	107	2,256	2,363	132	3,555	3,523	20,317
1958/59	1,998	1,854	3,100	878	3,614	114	2,252	2,366	108	3,420	6,999	18,061
1959/60	2,009	2,142	3,612	1,013	3,456	147	2,603	2,750	106	3,823	7,792	24,337
1960/61	2,698	2,358	4,075	1,125	3,193	163	2,481	2,644	109	4,088	8,012	22,085
1961/62	3,281	2,684	4,719	1,208	3,252	184	2,391	2,575	115	4,245	8,438	26,703
1962/63	4,367	3,080	5,344	1,446	3,441	184	2,798	2,982	116	4,851	9,282	24,100
1963/64	5,925	3,636	6,181	1,850	4,243	187	2,983	3,170	123	4,088	8,012	28,302
1964/65	7,556	4,539	8,051	2,388	4,965	301	3,100	3,401	138	4,245	8,438	25,821
1965/66	7,903	4,566	7,900	3,053	6,250	349	3,064	3,413	134	3,823	7,792	30,617
1966/67	8,274	5,208	8,824	3,460	7,561	411	3,292	3,703	137	4,088	8,012	30,226

Source:

Development of Higher Education, 1950-1967 - Statistical Survey (Greece), OECD, Paris, 1970.

Notes: (a) The non-university institutions included in this table are the same as those on table I.

(b) For a more accurate comparison with statistics on teachers, enrolments in the High School for Industrial Studies in Athens for the years 1955-1957 (1,023; 1,231; 1,276) and enrolments in the High School of Industrial Studies in Thessalonika for 1958 and 1959 (559 and 631) have been excluded from these figures. Teachers and students in the High School of Industrial Studies of Athens are included in social sciences since 1958/59. Those in the High School of Industrial Studies of Thessalonika are included as well, since 1960/61.

Table II bis (Indexes)

Student enrolments in university institutions and in a few
institutions of higher education of non-university type

Year	Field of specialisation	Pure science	Technology and architecture	Medicine	Agriculture	Humanities	Education	Law		Social sciences		Economics		Total
								Univ.	& Non-univ.	Univ.	& Non-univ.	Non-univ.	Univ. & Non-univ.	Univ.
1955/56		100	100	100	100	100	100	100	100	100	100	100	100	100
1956/57		96	111	83	125	116	88	108	124	104	104	103	103	105
1957/58		103	127	93	132	128	79	126	135	77	77	102	102	106
1958/59		94	142	106	148	137	79	103	130	154	154	125	125	130
1959/60		95	164	125	171	131	92	101	146	171	171	134	134	142
1960/61		127	180	139	190	121	88	104	156	176	176	142	142	152
1961/62		160	205	161	204	124	86	110	162	185	185	154	154	166
1962/63		206	235	182	244	131	99	175	110	185	204	100	100	178
1963/64		280	278	211	312	161	106	228	117	236	254	92	92	189
1964/65		357	347	275	403	189	113	257	131	261	328	82	82	235
1965/66		373	349	270	515	237	114	268	147	297	362	72	72	292
1966/67		390	398	301	583	287	124	230	150	300	421	58	58	307
														380

Source and notes: see table II.

IRELAND

I. Criteria for the recruitment and promotion of teaching staff

The teaching staff of the National University of Ireland consist of professors, lecturers, college lecturers, assistant lecturers, assistants and demonstrators. The University also employs a number of tutors. Only professors and lecturers are permanent members of the university teaching staff. They are appointed by the senate of the university on the recommendation of the faculties and the academic council. All other teachers are on yearly contracts. The renewal of their contracts becomes practically automatic after a probationary period of two years. Neither the professors nor the lecturers are allowed to engage in subsidiary activities.

The University of Dublin has two additional staff grades, i.e. senior lecturer and reader. The higher level staff are normally permanent members (particularly if they have been elected "fellows"). Assistant lecturers and other junior staff are on renewable contracts.

Staffs of establishments providing higher occupational and technical education include heads of departments, assistant heads of departments and senior lecturers in technology who are recruited by advertisement. Most staff are recruited on a full-time basis.

II. Trends in numbers of teachers and students in university education

1. Student/teacher ratios and numbers

Numbers of teachers and students from 1950 to 1964 are shown in the table in the annex. It has not been possible to give a breakdown by field of study. Furthermore, only two types of teaching level are shown: senior staff who include professors and fellows, and other teachers, who include lecturers, assistants and demonstrators. Using this breakdown, three kinds of ratio have been calculated in table A.

Table A
Student/teacher ratios

Year	Student/SS	Student/others	Student/total teachers
1950	38	19.8	13
1964	61.4	15.9	12.7

Source: Table in the annex.

2. Annual growth rates in numbers of university teachers and students between 1950 and 1964

Between 1950 and 1964 the number of senior teachers increased at an annual average rate of 1.3 per cent, whereas the growth rate for other teachers was 6.5 per cent. If the rate of increase of students (4.9 per cent) is compared with the rate for teachers (5.1 per cent) it is clear that owing to a considerable increase in other category teachers, the total number of teachers has increased slightly faster than the total number of students.

3. Structural changes in teaching staff

On the basis of the table in the annex it is possible to show how the structure of the teaching body has altered. In 1950, senior teachers still represented 34.2 per cent of the total number of teachers. In 1964 they represented no more than 20.6 per cent.

4. Complementary data

Taking account only of full-time university studies, the student/teacher ratio in Irish colleges was probably more favourable in 1938 than in 1964, as is shown in table B.

Table B

	1938/39	1948/49	1955/56	1959/60	1964/65
Full-time staff	294	348	423	497	730
Full-time students	4,978	6,796	6,951	8,653	13,006
Student/staff ratios	16.9	19.5	16.5	17.4	17.8

Source: Commission on Higher Education 1960/67, Vol.II, Chapter 25.

The above figures, whose source is different from that used for table A, show a distinct decline in student/staff ratios in Ireland during the first decade under review, a recovery between 1948 and 1955, and a further slight decline thereafter.

Moreover, the authors of the Commission on Higher Education 1960/67, from which we have taken the above extracts, have endeavoured to take account of the incidence of part-time students and teachers on these ratios. In the case of the students it was assumed that one part-time student represented approximately one-third of a full-time student. In the case of the teachers any attempt at the conversion should be viewed with caution owing to the wide variety of possibilities of posts offered. However, it was considered that five part-time teachers corresponded very roughly to one full-time teacher. The trend in the student/staff ratio in higher education (1) was as shown in table C.

Table C

Student/staff ratios using weighted numbers for the period 1938 to 1964

	1938/39	1964/65
Total number of full-time (or equivalent) teachers	321	808
Number of full-time (or equivalent) students	5,089	13,452
Student/teacher ratios	15.9	16.6

(1) All colleges: University College Dublin (UCD), University College Cork (UCC), University College Galway (UCG), Trinity College Dublin.

The Commission on Higher Education also gave a number of breakdowns by field of study for 1964-65 on which table D is based:

Table D

Staff and student numbers in higher education by main fields of study in 1964-65 (full-time studies)

	Science	Architecture	Technology	Medical sciences	Agriculture	Humanities	Total
Teachers	171	2	52	100	116	300	741
Students	3,108	73	866	1,516	562	6,751	12,876
Student/teacher ratios	18.2	36.5	16.7	15.2	4.9	22.5	17.4

III. Composition of the teaching body

According to UNESCO (1), in 1960-61 there were 884 teaching staff in the National University of Ireland, St. Patrick's College of Theology, the three university colleges and the University of Dublin. These included 122 women teachers and 301 part-time teachers. They had to teach a total of 11,412 students. This means that the percentage of women teachers was 13.8 per cent, the percentage of part-time teachers 34 per cent, in "physical" terms.

Furthermore in 1959/60 in the eight public and private teacher training colleges there were 132 teachers including 95 women teachers (percentage 72 per cent) and 1,169 students. The student/teacher ratio was therefore 8.9.

IV. Conclusions

Taking an overall and possibly a very approximate view, it seems true to say that during the period 1950-1964 the growth rate in number of senior level university teachers was definitely slower than that of students.

(1) World Survey of Education, Volume IV.

ANNEX I

Year	Total numbers (a)			Indexes (1950/51 = 100)			Breakdown of teachers in percentages		
	Students	Teachers (b)		Students	Teachers		SL	Others	SL
		SL	Others		SL	Others			
1950/51	7,328	193	371	664	100	100	100	100	34.2
1951/52	7,228	200	385	585	99	104	104	104	65.0
1952/53	7,515	190	392	582	103	98	106	104	
1953/54	7,696	193	384	577	105	100	104	103	
1954/55	8,083	201	430	631	110	104	116	112	
1955/56	8,118	199	478	677	111	103	129	120	29.4
1956/57	8,508	199	497	696	116	103	134	123	
1957/58	8,837	198	513	711	121	103	138	126	
1958/59	9,589	199	530	729	131	103	143	129	
1959/60	10,137	203	579	782	138	105	156	139	
1960/61	11,089	212	627	839	151	110	169	149	
1961/62	11,427	218	708	926	156	113	191	164	
1962/63	12,384	225	773	998	169	117	208	177	
1963/64	13,331	223	827	1,050	182	116	223	186	
1964/65	14,185	231	890	1,121	194	120	240	199	20.6
									79.4

Source: Statistical Abstracts of Ireland.

Notes: (a) University level.

(b) Includes full-time and part-time teachers - "senior level staff" includes professors and fellows - "Others" include lecturers, assistants and demonstrators. St. Patrick's College, Maynooth, has not been included.

ITALY

I. Criteria for the recruitment and promotion of teaching staff

University teachers in Italy are recruited on the basis of a public examination held at the request of the faculties concerned. No university degree is stipulated in order to sit for it; the candidate must, however, demonstrate his real teaching ability to a Board, which generally consists of full professors and specialists in the field concerned or related fields. The candidate selected is appointed extraordinary professor. If his work proves satisfactory after a three-year probationary period, he may be appointed ordinary professor. Promotion is thenceforth automatic.

Ordinary professors or supernumerary professors between 70 and 75 may not have any other salaried work. Professors not occupying chairs may take other employment, but their salaries are then halved, and they lose various other material advantages.

Assistants are also recruited on the basis of a competitive examination. They are then required to obtain the "libera docenza" within ten years (see below), without interrupting their teaching functions. Those wishing to make university teaching their career specialise in a particular field after obtaining the "laurea", and sometimes a further qualification. Their specialisation normally leads to the "libera docenza", which qualifies them for higher level teaching, awarded on the strength of degrees and diplomas obtained, and on the results of competitive examinations.(1)

Professors not holding chairs generally possess the "libera docenza", which qualifies them to give "free lectures". It is awarded for five years, and may be renewed.

A full professor may be allowed to take a sabbatical year, on full pay, to pursue research work.

Under the existing regulations, a professor teaching a specialised subject may be required to give not more than one other course in a related field. Those giving two courses represent about one third of the total teaching body.(1)

II. Trends in numbers of teachers and students in higher education

There is no non-university higher education in Italy, all higher education being provided by the universities.

1. Student/teacher ratios and numbers

The numbers of teachers and students will be found in tables I and II in annex. The figures are taken from the Italian Educational Yearbook and have been used as a basis for the student/teacher ratios calculated in table A.

2. Average annual rates of growth in university staff and student numbers in the various fields of study between 1950 and 1965

The rates of change are shown in table B, which indicates a relatively consistent increase in the number of all teachers (somewhere between 4 and 7 per cent), whereas the student numbers vary widely according to the field of study concerned.

(1) Answers to "complementary questions".

These differences in growth rates mean that the situation has developed on very different lines in different faculties. There is a distinct improvement in student/teacher ratios in science, technology, medical sciences, agriculture and law; but in architecture, humanities and social science, the position has deteriorated, as already noted in table A.

In technology, medical sciences, agriculture and law, the number of senior level teachers has risen relatively faster than the number of students.

In all fields of study, junior level teachers have shown the highest growth rates.

Note should be taken of the generally small increase (or in some instances the decline) in student numbers during the period considered, except in architecture, humanities and social sciences.

Table A

Student/teacher ratios, classified by level of teaching and field of study in university level higher education, 1950 and 1965

Field of study	Year	S/SL	S/ML	S/JL	S/SL+ML	S/Total
Pure science	1950	98.5	35.8	21.4	26.3	11.8
	1965	108.0	30.0	13.0	23.5	8.4
Architecture	1950	120.2	22.0	13.2	18.6	7.7
	1965	201.8	65.0	9.5	49.2	7.9
Technology	1950	179.4	107.0	33.1	67.0	22.1
	1965	170.8	57.3	15.8	42.9	11.5
Medical sciences	1950	122.3	135.1	10.7	64.2	9.2
	1965	66.3	66.1	4.0	33.1	3.5
Agriculture	1950	52.5	25.8	12.9	17.3	7.4
	1965	27.7	16.2	4.6	10.2	3.2
Humanities	1950	152.0	131.6	36.7	70.5	24.1
	1965	261.5	154.4	37.9	97.1	27.2
Law	1950	117.4	200.2	51.6	74.0	30.4
	1965	113.6	189.4	20.0	71.0	15.6
Social sciences	1950	205.9	117.3	47.0	74.7	28.8
	1965	346.0	258.3	43.3	147.9	33.5
Average ratios	1950	130.3	89.4	22.6	53.0	15.8
	1965	152.5	83.7	15.5	54.0	12.0

Table B

Average annual growth rates in staff and student numbers at universities (1950 to 1965)

(in percentages)

Field of study	Teachers				Students
	SL	ML	JL	Total	
Pure science	4.1	6.0	8.3	7.2	4.8
Architecture	3.3	-0.5	9.3	6.8	7.0
Technology	3.0	7.0	7.9	7.2	2.6
Medical sciences	2.4	3.1	5.1	4.8	-1.7
Agriculture	2.3	1.1	5.1	3.7	-2.0
Humanities	2.6	5.2	6.1	5.5	6.4
Law	1.1	1.2	7.4	5.4	0.8
Social sciences	4.0	2.2	8.3	6.6	7.7
Total	2.7	4.2	6.4	5.7	3.8

3. Structural changes in the teaching body

Table C below shows changes in the composition of the teaching body, classified by level, between 1950 and 1965.

Table C

Structural changes in the teaching body
(as percentage of total teachers)

Field of study	1950/1951			1965/1966		
	SL	ML	JL	SL	ML	JL
Pure science	12.0	33.0	55.0	7.8	27.9	64.3
Architecture	6.4	35.0	58.6	3.9	12.2	83.4
Technology	12.3	20.7	67.0	6.8	20.1	73.1
Medical sciences	7.5	6.8	85.7	5.3	5.4	89.3
Agriculture	14.1	28.7	57.2	11.4	19.5	69.1
Humanities	15.9	18.3	65.8	10.4	17.6	72.0
Law	25.9	15.2	58.9	13.7	8.2	78.1
Social sciences	14.0	24.6	61.4	9.7	13.0	77.3
Total	12.2	17.7	70.1	7.9	14.4	77.7

Source: Tables I and II in annex.

In all fields of study, there was a drop in the proportion of senior and middle level teachers, and a rise in the proportion of junior level teachers.

III. Composition of the teaching body

1. Proportion of women teachers

The answers to the "complementary questions" indicate that the percentage of women teachers in higher education is still low (now about 18 per cent), although it has risen appreciably since 1945 (when it was about 9 per cent).

2. Proportion of part-time teachers

UNESCO has published figures giving a rough idea of the composition of the teaching body according to length of service. These figures, covering the years 1957-58 to 1961-62, are reproduced in table D. The proportion of part-time teachers, in "physical" terms, which was already high in 1957 (61.9 per cent), rose further during the period under consideration (70.9 per cent in 1961).

3. Increase in the number of junior level teachers

As already noted under II.2, the number of junior level teachers increased much faster than the teaching body as a whole. The annual rate of growth at this level between 1950 and 1965 was, on average, 0.7 per cent higher than the rate for the total teaching body.

IV. Conclusions

The situation in respect of numbers of teachers has developed fairly favourably on the whole, as only at the senior level has the increase failed to keep pace with the growth in student numbers; the margin of difference is, however, still very small.

There was a distinct drop in the student/teacher ratio in science, technology, medical sciences and agriculture, but a definite rise in the ratio in humanities and social sciences. In addition, the number of teachers rose fairly steadily in all fields of study (by 4 to 7 per cent), irrespective of the trends in student numbers.

Table D
Proportion of part-time teachers in university higher education

	Year	Number of institutions	Teaching staff		
			Total	Absolute figures	Percentages
Universities and institutions awarding equivalent qualifications	1961-62	43	21,902	15,529	70.9
	1960-61	43	17,171	10,889	63.4
	1959-60	40	16,534	10,722	64.8
	1958-59	40	15,161	9,633	63.5
	1957-58	40	13,816	8,547	61.9

Source: UNESCO, World Survey of Education, Volume IV.

TEACHING STAFF BY FIELD OF SPECIALISATION
 IN UNIVERSITY INSTITUTIONS
 (FULL TIME AND PART TIME)
 PERSONNEL ENSEIGNANT PAR BRANCHE DANS LES
 ETABLISSEMENTS DE TYPE UNIVERSITAIRE
 (PLEIN TEMPS ET TEMPS PARTIEL)

COUNTRY : ITALY
 PAYS : ITALIE
 TABLE : I bis(Indexes)
 TABLEAU : I bis(Indices)

Year / Année	Field of specialization/ Branches	PURE SCIENCE SCIENCES PURÉES	ARCHITECTURE	TECHNOLOGY TECHNIQUE	MEDICAL SCIENCE SCIENCES MEDICIALES	AGRICULTURE	HUMANITIES LETTRES	LAW DROIT	SOCIAL SCIENCES SCIENCES SOCIALES	TOTAL
1950/51		100	100	100	100	100	100	100	100	100
1951/52		108	92	102	111	107	100	105	100	106
1952/53		114	104	113	115	113	106	113	111	113
1953/54		120	106	116	119	111	109	116	120	116
1954/55		128	112	119	130	122	113	114	119	123
1955/56		137	120	124	137	126	119	117	131	130
1956/57		147	129	130	146	129	128	124	141	139
1957/58		149	126	128	150	127	133	130	138	140
1958/59		163	147	150	162	155	143	143	159	155
1959/60		182	10	234	176	140	154	145	176	169
1960/61		186	185	197	182	147	172	158	185	178
1961/62		200	200	220	200	145	176	169	199	192
1962/63		215	193	198	186	149	179	180	211	189
1963/64		239	199	230	185	155	188	191	227	199
1964/65		254	201	251	184	156	204	191	242	206
1965/66		283	266	285	201	173	223	221	261	229

Source : see Table I.
 voir Tableau I.

Table II

STUDENT ENROLLMENTS IN UNIVERSITY INSTITUTIONS
(Absolute figures and indexes)

	PURE SCIENCE	ARCHITECTURE	TECHNOLOGY	MEDICAL SCIENCES	AGRICULTURE	HUM. SCIENCES	LAW	SOCIAL SCIENCES	TOTAL	
	TOTAL	IND.	TOTAL	IND.	TOTAL	IND.	TOTAL	IND.	TOTAL	
1950/51	23,158	100	3,606	100	29,967	100	7,457	100	46,974	100
1951/52	23,442	101	3,565	99	27,923	95	46,525	95	6,991	94
1952/53	24,109	104	3,877	108	26,753	89	45,786	93	6,470	87
1953/54	23,466	101	3,935	109	25,693	95	42,717	87	5,928	79
1954/55	22,555	97	4,156	115	25,225	84	39,883	81	5,630	75
1955/56	22,233	96	4,405	122	24,409	81	36,859	75	5,295	71
1956/57	22,281	96	4,612	128	24,368	81	33,788	69	4,887	66
1957/58	23,792	102	4,945	137	24,834	83	32,467	66	4,701	63
1958/59	25,453	110	5,242	145	26,862	90	31,671	64	4,571	61
1959/60	27,222	118	5,721	159	27,948	93	31,927	65	4,844	65
1960/61	29,189	126	6,042	168	29,880	100	31,412	64	4,594	62
1961/62	31,260	125	6,615	183	31,690	106	31,501	64	4,815	65
1962/63	34,058	147	7,107	197	33,422	112	32,161	65	4,788	64
1963/64	37,111	160	7,792	216	35,911	120	32,132	65	4,612	62
1964/65	38,965	168	8,861	245	37,776	126	34,410	70	4,823	65
1965/66	46,542	201	9,886	274	44,414	148	38,148	78	5,508	74

Source : See Table I.

JAPAN

In Japan higher education is provided either at state-run or private universities. In 1960, 57.1 per cent of universities were privately run. Apart from the universities there are post-secondary colleges designed to provide practical occupational training combined with general education. These schools train not only engineers but also technical personnel for trade and industry. There are also technical colleges which offer pupils leaving junior secondary schools five years of combined general and occupational training.

I. Criteria for the recruitment and promotion of teaching staff

The staff of Japanese universities consists of professors with chairs, assistant professors, lecturers and assistants. For appointment to a chair it is not necessary to have a doctorate but candidates lacking this title must either have published work comparable in importance to a thesis, or have already occupied a chair in another university, or must be an assistant professor and have published enough studies to provide evidence of a high level of specialisation. The same conditions for appointment to teaching posts apply for both private and public universities. A member of the university staff is allowed to engage in activities outside the field of teaching if the Ministry of Education considers that they do not detract from his teaching activities. Promotion is not automatic but on the recommendation of the President. The answers to the "complementary questions" show that all teaching staff have the theoretical qualifications demanded by the Ministry of Education.⁽¹⁾ There are consequently no university teachers in Japan who are inadequately qualified.

II. Trends in numbers of teachers and students in higher education

The numbers of teachers and students are shown in tables I and II in annex. These relate to both the university and non-university sectors of higher education. No breakdown by field of study is possible. A number of student/teacher ratios have been worked out.

A. University Education

1. Student/teacher ratios and numbers

Table A shows the ratio trends of students/teachers in higher education. Interesting calculations have been made which show that the ratios have improved more for full-time teachers than for part-time teachers and full-time teachers together. On the other hand, the same calculations according to the different levels show diverging results.

(1) Consult annex II (provided by the Ministry of Education) for official criteria for recruiting and promoting university teachers.

Table A

Student/teacher ratios by level and type of staff in universities between 1950 and 1965

	Students/full-time and part-time teachers					Students/full-time teachers only				
	S/SL	S/ML	S/JL	S/SL+ML	Students Total	S/SL	S/ML	S/JL	S/SL+ML	Students Total
1950-51	38.0	20.1	90.7	13.2	11.5	53.5	42.7	101.3	23.8	19.3
1965-66	49.3	20.8	46.2	14.6	11.1	52.9	41.9	51.5	23.4	16.1

For the period 1964-65 the answers to the "complementary questions" give the following breakdown, relating exclusively to full-time teachers: (table B).

Table B

Number of full-time teachers (a) by field of study on 1st June, 1965 (public and private universities)

Field of study	Number of teachers	Percentage
(1) Pure science	8,724	15.8
(2) Architecture	750	1.4
(3) Technology	8,505	15.4
(4) Medical sciences	14,488	26.3
(5) Agriculture	3,906	7.1
(6) Humanities	10,694	19.4
(7) Education	933	1.7
(8) Fine arts	1,550	2.8
(9) Law	1,468	2.7
(10) Social sciences	3,809	6.9
(11) Other subjects	267	0.5
Total (b)	55,094	100.0

Source: Statistical Survey of Teachers, 1965 (Japanese Ministry of Education).

- Notes: (a) The above figures do not include teachers on special leave or those temporarily studying abroad. The total number of teachers shown, therefore, falls short of the figures in table I in the annex.
- (b) 397 teachers who do not belong to any of the above fields are not shown in this table.

2. Annual growth rates of university staff and students between 1950 and 1965

The average annual growth rate in the numbers of teaching staff of universities with a breakdown by level and terms of employment together with the growth rate in the student body are shown in table C:

Table C

Average annual growth rates of university staff and students from 1950 to 1965

(in percentages)

	Staff				Students
	SL	ML	JL	Total	
Full-time	10.1	10.1	15.0	11.3	
Part-time	-1.9	9.4	14.9	8.3	
Total	8.1	9.8	15.0	10.2	10.0

The above table shows that the increase in full-time teachers was more rapid than the increase in students on the one hand and part-time teachers on the other. The divergence in the trends is very pronounced in the case of senior level staff. Moreover, table V in annex I clearly shows that the number of full-time senior level staff has steadily increased whereas the trend in part-time senior level staff has shown what at first sight appears to be a number of rather erratic fluctuations.

3. Structural changes in the university teaching body between 1950 and 1965

The changes shown in table D indicate that in 1965 junior level, full-time teachers occupied a larger place than senior level full-time teachers. This is contrary to the situation in 1950.

Table D

Structural changes in university teaching staff from 1950 to 1965

(as percentage of total teachers)

	SL		ML		JL	
	full-time	part-time	full-time	part-time	full-time	part-time
1950	35.9	21.8	45.1	74.9	19.0	3.3
1965	30.4	5.0	38.4	87.1	31.2	7.9

B. Non-university type higher education

Junior colleges and technical colleges are considered to be non-university institutions of higher education by the Japanese authorities.

1. Absolute numbers and student teacher ratios

The student/teacher ratios shown in table E were calculated on the basis of tables I and II in annex I:

Table E

Student/teacher ratios by level and terms of employment
of teachers in non-university institutions of higher education

	I. Students /full-time plus part-time teachers					II. Students/full-time teachers					
	S/SL	S/ML	S/JL	S/SL+ML	S/Staff overall	S/SL	S/ML	S/JL	S/SL+ML	S/Staff overall	
	1950-51	10.5	4.7	49.1	3.2	3	16.8	12.9	61.5	7.3	6.5
1965-66	30.6	5.2	37.9	4.5	4	41.9	26.4	80.2	16.2	13.5	

Table E shows a considerable increase in the student/full-time teacher ratios in non-university-type higher education between 1950 and 1965. The trend therefore appears very different from that shown for the university sector.

2. Average annual growth rates of non-university numbers

The situation described above is confirmed by the comparison of average annual growth rates in numbers of students and teachers over this 15 year period (table F).

Table F

Average annual growth rates in numbers of students and teachers
in junior colleges and technical colleges (1950-65)

(in percentage)

	Teachers												Students	
	Junior colleges				Technical colleges				Total					
	SL	ML	JL	Total	SL	ML	JL	Total	SL	ML	JL	Total		
Full-time	9.4	10.1	14.1	10.4	63.0	79	(a)	78						
Part-time	7.4	11.4	8.4	10.7	-12.7	58	(a)	63						
Total	8.7	11.0	13.2	10.5	59.0	73	(a)	72	9.3	11.7	14.1	11.4	17.1	

Note: (a) As the number of these teachers at the beginning of the period was almost negligible, the resulting rates of growth are not significant.

3. Structural changes in non-university teaching staff

In order to take account of the recent creation of "technical colleges", the structural changes are presented separately in table G by colleges. The growth in strength of junior level teachers among full-time teachers can be seen.

Table G
 Structural changes in non-university teaching staff
 (as percentage of total teachers)

	SL		ML		JL	
	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Junior colleges 1950	38.7	20.4	50.7	77.3	10.6	2.3
1965	34.0	12.9	48.6	85.3	17.4	1.8
Technical colleges 1962	29.1	9.8	63.1	90.2	7.8	-
1965	22.3	1.9	64.3	95.9	13.4	2.2

III. Composition of the teaching body

Tables D and G have already shown the growth in strength of junior level teachers (except among the part-time non-university teaching body). In answer to the "complementary questions" it was reported that out of 36,565 teaching posts on 30th June, 1969, 2,652 had not been filled.

In 1965 a statistical survey of teaching staff was carried out by the Ministry of Education. According to this survey the number of hours of teaching staff was as follows:

Table H
 Hours of teaching in higher education

	Professors	Assistant professors	Lecturers	Average
National university	13.1	12.0	10.6	12.2
Public university	13.4	11.5	9.2	11.7
Private university	11.5	12.1	10.5	11.3
Average	12.4	12.0	10.4	11.8

Source: Answers to the "complementary questions".

1. Part-time teachers

It was possible to assess these teachers with the help of table I in annex I. In 1950 they represented (in "physical" terms) 40.3 per cent of the total number of teachers in universities and 53.3 per cent of teachers in junior colleges. In 1965 they accounted for 31 per cent of university teachers, 54.4 per cent of staff in junior colleges and 17.7 per cent of teachers appointed to technical colleges.

Table I
Percentage of women teachers in higher education (a)

University year	Total number of teachers	Total number of women teachers	Percentage of women teachers
1949	7,437	553	7.4
1950	11,534	649	5.6
1951	17,475	1,037	5.9
1952	23,123	1,392	6.0
1953	32,819	1,583	4.8
1954	36,489	1,905	5.2
1955	38,010	1,979	5.2
1956	39,289	2,089	5.3
1957	40,444	2,221	5.5
1958	41,481	2,326	5.6
1959	42,775	2,533	5.9
1960	44,434	2,693	6.1
1961	45,471	2,926	6.4
1962	47,850	3,203	6.7
1963	50,911	3,649	7.2
1964	54,408	4,084	7.5
1965	57,445	4,233	7.4
1966	62,642	4,934	7.9
1967	66,738	5,349	8.0

Source: Fundamental Statistical Survey of Schools 1949-1967 (annual).

Note: (a) Full-time teachers only.

2. The part played by women teachers

The data given in tables I and J concern only full-time men teachers.

After irregular growth between 1949 and 1955 the percentage of women teachers in university education increased slightly almost reaching 8 per cent in 1967.

As in other countries the strength of women teachers is felt more in non-university education. Their numbers have grown regularly since 1950 in junior colleges to reach almost 40 per cent in 1967, and around one-third in technical colleges.

Table J

Percentage of women teachers in the non-university
institutions of higher education (a)

University year	Teachers in junior colleges			Teachers in technical colleges			Total		
	Total (A)	Women teachers (B)	B/A	Total (A)	Women teachers (B)	B/A	Total (A)	Women teachers (B)	B/A
1950	2,124	600	28.2						
1951	2,956	833	28.2						
1952	3,620	1,004	27.7						
1953	4,221	1,174	27.8						
1954	5,023	1,493	29.7						
1955	5,505	1,675	30.4						
1956	5,687	1,786	31.4						
1957	6,187	1,952	31.6						
1958	6,087	2,003	32.9						
1959	6,161	2,091	33.9						
1960	6,394	2,251	35.2						
1961	6,743	2,406	35.7						
1962	7,284	2,576	35.4	298	1	0.3	7,582	2,577	34.0
1963	7,918	2,902	36.7	680	0	0.0	8,598	2,902	33.8
1964	8,704	3,237	37.2	1,166	6	0.5	9,870	3,243	32.9
1965	9,321	3,555	38.1	1,691	11	0.7	11,012	3,566	32.4
1966	11,492	4,400	38.3	2,198	13	0.6	13,690	4,413	32.2
1967	13,449	5,234	38.9	2,506	10	0.4	15,955	5,244	32.9

Source: Answers to "complementary questions".

Note: (a) Full-time teachers only.

IV. Conclusions

In general the number of full-time teachers at all levels in Japanese universities increased proportionately more than the number of students. As far as all university teachers are concerned (full-time and part-time) only junior level staff increased more rapidly than students. The absolute number of part-time senior staff declined.

In non-university institutions, all teaching staffs at all levels have constantly increased more slowly than the total number of non-university students.

Part-time teachers and women teachers are proportionately more numerous in private universities than in public universities, and in junior colleges than in universities.

Although there was no clear trend before 1953 it would seem that the percentage of women teachers in universities has slowly but steadily increased since that date.

TEACHING STAFF BY SUBJECT AND FIELD OF SPECIALISATION IN TERTIARY INSTITUTIONS, AND EDUCATIONAL INSTITUTIONS AND ALL OTHER INSTITUTIONS WHICH PROVIDE PRIMARY, SECONDARY AND TERTIARY EDUCATION

24

1 Annual Report of the Ministry of Education 1979-1980 and Annexes to "Complementary questions".
Rapport annuel du Bureau de l'Éducation 1979-1980 et Annexes à "Questions complémentaires".

TEACHING STAFF BY STATUS AND FIELD OF SPECIALISATION IN UNIVERSITY
 INSTITUTIONS, NON UNIVERSITY INSTITUTIONS AND ALL HIGHER EDUCATION
 PERSONNEL ENSEIGNANT PAR STATUT ET BRANCHE DANS LES ETABLISSEMENTS
 DE TYPE UNIVERSITAIRE, NON UNIVERSITAIRE ET POUR L'ENSEMBLE
 DE L'ENSEIGNEMENT SUPERIEUR

COUNTRY : JAPAN
 PAYS : JAPON
 TABLE : I bis (Indexes)
 TABLEAU : I bis (Indices)

Field of specialization/ Branches	Full time Plein temps			Part time Temps partiel			Total		
	Universities Universités	"Junior Colleges"	Total	Universities Universités	"Junior Colleges"	Total	Universities Universités	"Junior Colleges"	"Technical Colleges"
Year / Année									
1950/51	100	100	100	100	100	100	100	100	
1951/52	152	139	150	74	148	92			
1952/53	200	170	196	178	194	181			
1953/54	285	199	271	138	215	156			
1954/55	316	236	304	163	255	185			
1955/56	330	259	319	176	276	200			
1956/57	341	268	329	196	278	216			
1957/58	351	291	341	191	282	213			
1958/59	360	287	348	190	288	213			
1959/60	371	290	358	197	291	219			
1960/61	385	297	372	213	299	233			
1961/62	394	317	382	234	331	257			
1962/63	415	343	406	249	332	270			100
1963/64	441	373	436	275	406	308			
1964/65	475	410	473	292	419	322			
1965/66	498	439	501	330	458	364	430	449	514

STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS, NON UNIVERSITY INSTITUTIONS
AND ALL HIGHER EDUCATION
EFFECTIFS D'ÉTUDIANTS DANS LES ÉTABLISSEMENTS DE TYPE UNIVERSITAIRE, NON
UNIVERSITAIRE ET FOUR L'ENSEIGNEMENT SUPÉRIEUR

COUNTRY : JAPAN
PAYS : JAPON
TABLE : II
TABLEAU : II

Field of specialization/ Branches	Year / Année	UNIVERSITY LEVEL						NIVEAU UNIVERSITAIRE						Non University University	Non Universi- taire (c)	Total All Higher Education Enseignement supérieur (d), établis. s.
		PURE SCIENCE SCIENCES PURES	ARCHITECTURE (a)	TECHNOLOGY TECHNOLOGIE (a)	MEDICAL SCIENCE SCIENCES MÉDICALES (a)	AGRICULTURE	HUMANITIES LETTERS	EDUCATION	FINE ARTS BEAUX ARTS	LAW DROIT (b)	SOCIAL SCIENCES SCIENCES SOCIALES (b)	OTHER AUTRES	Total (c)			
1950/51	5 902		29 755	4 307	10 330	25 521	36 147	1 828		91 682	15 572	222 044	13 839	235 883		
1951/52	7 34		41 132	9 062	15 783	41 717	50 366	3 085		126 273	14 137	309 389	34 935	344 322		
1952/53	9 733		53 621	15 034	21 439	50 276	63 554	4 269		160 111	14 984	393 031	51 463	444 494		
1953/54	9 867		58 801	19 756	22 917	56 050	65 935	4 587		179 734	18 305	435 952	62 238	488 190		
1954/55	10 256		62 915	24 033	23 733	60 294	69 047	5 193		198 194	20 867	475 132	71 044	546 176		
1955/56	9 908		68 275	29 364	25 800	76 683	62 631	5 924		205 549	19 571	503 705	76 025	579 730		
1956/57	9 703		72 064	34 073	26 675	80 062	63 123	6 386		214 665	16 097	522 868	75 346	598 214		
1957/58	15 776	15 674	57 911	35 321	26 527	91 198	61 436	9 662		224 719	...	538 524	71 585	610 109		
1958/59	16 315	16 853	60 650	31 166	26 861	85 801	60 663	8 235		234 507	25 340	566 411	69 821	636 232		
1959/60	16 687	17 615	67 016	31 714	26 982	88 027	60 372	8 563		245 059	25 776	587 811	74 022	661 833		
1960/61	18 093	18 556	77 059	32 166	28 751	96 672	59 674	9 375		258 516	18 336	617 198	81 228	658 426		
1961/62	19 414	20 318	87 519	33 770	29 998	103 992	59 660	10 258		276 311	19 419	660 659	91 345	751 904		
1962/63	21 192	22 462	101 197	35 241	31 994	111 643	60 892	11 199		238 983	21 241	717 262	105 342	822 604		
1963/64	24 027	25 757	118 928	37 226	34 190	121 224	61 172	12 785		261 355	18 040	783 468	120 238	903 706		
1964/65	26 787	28 392	133 392	39 282	35 982	130 063	62 194	14 077		279 201	19 116	841 896	126 513	968 209		
1965/66	30 663	33 540	149 539	42 226	38 165	143 496	65 541	15 124		304 771	20 584	923 919	146 501	1 072 420		
1966/67																

Sources : Annual Reports of the Ministry of Education 1959-1965.
and Answers to Complementary Questions.

Notes : (a) Students enrolled in Architecture are included in Technologist up to 1956.

(b) Students in advanced courses (non-degree courses) are excluded.

(c) Students in advanced courses (non-degree courses) are included in Social Sciences up to 1961.

Sources : Rapports annuels du ministère de l'Éducation 1959-1965.
et Réponses aux Questions complémentaires.

Notes : (a) Les effectifs d'étudiants inscrits en architecture sont présentés avec la technologie jusqu'en 1956.

(b) Le nombre des étudiants inscrits en droit est compris dans celui des sciences sociales jusqu'en 1961.

(c) Les étudiants inscrits dans les cours d'études supérieures qui ne donnent pas lieu à l'obtention de diplômes sont exclus de ces statistiques.

Table II bis (Indexes)

STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS, NON-UNIVERSITY INSTITUTIONS AND ALL HIGHER EDUCATION

Field of spec- ialis- ation Year	University										Non- univer- sity			All higher educa- tion
	Pure science	Archit- ecture	Techno- logy	Medicinal sciences	Agri- culture	Humanit- ies	educa- tion	Fine arts	Law	Social sciences	Other	Total	100	
1950/51	100		100			100		100		100		100	100	100
1951/52	133	138	210	153	157	139	169	138	91	139				146
1952/53	165	180	349	208	190	176	254	175	96	177				188
1953/54	167	198	459	222	211	182	251	196	118	196				211
1954/55	174	211	558	230	227	191	284	217	134	214				232
1955/56	168	229	682	250	289	173	324	224	126	227				246
1956/57	164	242	791	258	302	175	349	234	103	235				254
1957/58	267	100	195	820	258	344	170	529	245	242				259
1958/59	276	106	204	724	260	324	168	450	256	163				270
1959/60	283	111	225	736	261	332	167	468	267	166				281
1960/61	307	117	259	747	278	365	165	513	282	118				296
1961/62	329	128	784	290	392	165	561	301	125	297				319
1962/63	359	142	340	818	310	421	168	613	100	261				349
1963/64	407	162	405	864	331	457	169	699	112	285				383
1964/65	454	179	448	912	348	490	172	770	120	305				410
1965/66	520	211	503	980	369	541	179	882	131	332				416
											1,073			455

Sources and notes: See table II.

Table III

Percentage distribution of teaching staff in universities
and junior colleges by type of position

	1959/60	
	Universities	Junior colleges
Total	100	100
"Presidents"	0.6	2.9
"Professors"	27.3	27.2
"Assistant Professors"	25.6	21.1
"Lecturers"	14.7	33
"Assistants"	31.8	15.8

Source: Annual Report of the Ministry of Education, 1959-1965.

ANNEX II

Answers to "complementary questions" Qualifications required for teaching staff

Article I

Qualifications for professors

Any person who satisfies one of the following conditions may be appointed as professor:

- (1) Any person who holds the degree of Hakushi (Doctor's degree) (including equivalent degrees awarded in foreign countries);
- (2) Any person whose achievements in research are recognized as equivalent to those specified in the preceding paragraph;
- (3) Any person engaged as professor in a university (including universities under the former University Ordinance Imperial Ordinance No. 388, 1918. The same shall apply hereinafter in this Article, in the following Article and Article IV);
- (4) Any person engaged as assistant professor and also recognized to have appropriate achievements in teaching and research;
- (5) Any person engaged for five years or more as teacher in Higher Schools and Colleges (Higher Schools under the former Higher School Ordinance, Imperial Ordinance No. 389, 1918, and Colleges under the former College Ordinance, Imperial Ordinance No. 61, 1903. The same shall apply hereinafter in Item 5 of the following Article), and other schools whose level is recognized to be equal to or higher than the schools aforesaid, and who is recognized to have appropriate achievements in teaching and research;
- (6) In art, physical education and the like, any person with special skills engaged in teaching.

Article II

Qualifications for assistant professors

Any person who satisfies one of the following conditions may be appointed as assistant professor:

- (1) Any person who may be appointed professor under the preceding article;
- (2) Any person engaged as assistant professor or full-time lecturer in a university;
- (3) Any person engaged for three years or more as assistant or equivalent teaching staff in a university, and recognized to be competent for teaching and research;
- (4) Any person who holds the degree of Shushi (Master's degree) or who was enrolled at post-graduate courses of universities under the former University Ordinance for three years or more, and is recognized to have ability in teaching and study;

- (5) Any person engaged for three years or more as professor or five years or more as assistant professor or full-time lecturer in Higher Schools, Colleges or other schools, recognized to have appropriate achievements or ability in teaching and study;
- (6) Any person engaged in research institutes, laboratories, investigation institutes and the like for five years or more, and recognized to have appropriate achievements in research.

Article III

Qualifications for lecturers

Any person who satisfies one of the following conditions may be appointed as lecturer:

- (1) Any person who can be appointed professor or assistant professor under Article I or the preceding Article;
- (2) Any person recognized to have ability in teaching specialized fields of specific study.

Article IV

Qualifications for assistants

Any person who satisfies one of the following conditions may be appointed as assistant:

- (1) Any graduate of a university faculty;
- (2) Any person recognized to have equivalent ability to that specified in the preceding paragraph.

NORWAY

It was possible to investigate only the university-type institutions in Norway. The following are the only institutions deemed to be of university-type and, as such, authorised by the national authorities to award academic degrees:

University of Oslo (Universitetet i Oslo)
University of Bergen (Universitetet i Bergen)
Norwegian School of Economics and Business Administration (Norges Handelshøgskole)
State Institute of Technology (Norges tekniske høgskole)
State Teacher Training College (Norges laererhøgskole)
State College of Agriculture (Norges landbrukshøgskole)
State Veterinary College (Norges veterinaerhøgskole)
Training College for Instructors in Physical Education (Statens gymnastikkskole)
Independent Theological College (Menighetsfakultetet)

I. Criteria for the recruitment and promotion of teaching staff

The teaching staff in these institutions are full professors, generally appointed by the Government for life, on the proposal of the Faculty and the Senate of the University concerned. "Dosenters" are also appointed by the Government. Lecturers, "konservatorers" and "amanuensis" are appointed by the Senate of the Faculty. The academic qualifications and teaching abilities of the candidates are assessed by a committee of experts chosen by the Faculty from among Norwegian or foreign teachers in higher education. Professors and "dosen-ters" are required to put in five hours' teaching per week, lecturers generally more. In some cases, a Chair may be established to give the students the benefit of the knowledge of some eminent figure in the field of science or the arts. The Faculties concerned and the university Senate recommend the establishment of the Chair, and the incumbent is appointed as soon as the necessary funds have been voted.

II. Trend in numbers of teachers and students in university-type higher education

On the basis of the available national statistics on higher education in Norway, the trend in the number of teachers in relation to the number of students, between 1956 and 1965, can be considered for only a certain number of institutions. These are listed in footnote (a) to table I in annex; all are institutions in which university-type education is provided.

1. Student/teacher ratios and numbers

Tables I and II in annex show the numbers of teachers for the period 1955-65, broken down by field of study and by level, with the corresponding numbers of students.

On the basis of these figures, various student/teacher ratios have been worked out as shown in table A below. As, however, the data available for 1955 are incomplete, it was preferred to calculate all the ratios using for base years 1956 and 1965.

Table A
Student/teacher ratios by level of teacher in 1956 and 1965

Field of study	Year	S/SL	S/ML	S/JL	S/SL+ML	ST/T
Pure science	1956	17.2	61.3	6.7	13.4	4.4
	1965	70.3	99.5	13.2	45.8	9.1
Technology	1956	22.8	60.5	9.0	16.6	6.1
	1965	35.7	47.4	8.8	20.4	6.2
Agriculture	1956	8.3	47.4	4.4	7.1	2.7
	1965	13.0	30.3	3.1	9.1	2.3
Medical sciences	1956	16.3	11.8	9.2	8.8	4.4
	1965	17.8	34.0	9.2	11.7	5.2
Humanities	1956	23.9	105.9	22.1	19.5	10.4
	1965	11.0	384.6	38.3	85.4	26.4
Law	1956	45.5	197.0	59.1	36.9	22.7
	1965	126.4	695.0	51.5	106.9	34.8
Social sciences	1956	30.3	60.9	16.8	20.2	9.2
	1965	57.5	86.3	11.8	34.5	8.8
Average ratio	1956	20.1	49.3	10.8	14.3	6.1
	1965	51.4	98.8	13.8	33.8	9.8

The above table clearly shows an increase in all the average student/teacher ratios, except in agriculture and the social sciences.

The S/SL ratio has risen in all fields except humanities; the S/ML ratio has fallen in technology and agriculture; the S/SL+ML ratio has risen in every field. Finally, the number of junior level teachers has risen faster than the number of students in many fields.

Additional data

Further data for 1960 are available for all full-time staff in universities and other higher education institutions. These figures are summarised in table B.

Table B
Full-time staff in university-type institutions in 1960

	Total	Pure science	Techno-logy	Medical sciences	Social sciences	Humanities
SL (a)	271	54	66	51	34	66
ML (b)	436	135	108	52	45	96
JL (c)	530	155	225	75	35	40
Total	1,237	344	399	178	114	202

Source: Innstilling om den videre utbygging av våre universiteter og høgskoler fra universitets og høgskolekomiteen av 1960.

Notes: (a) Professor.

(b) Privat-docent (dosent), reader (lektor) and "amanuensis".

(c) Vitenskaplige assistenter and stipendiat.

Further student/staff ratios by field of study were also calculated for 1965, based on figures from another source.(1) They are summarised below in table C.

Table C
Student/teacher ratios in 1965

Field of study	Students/permanent staff (civil servants)	Students/total teaching and research staff
Pure science	4,200/298 = 14.1	4,200/562 = 7.5
Technology	2,650/241 = 11	2,650/438 = 6.1
Medical sciences	1,370/213 = 6.4	1,370/366 = 3.7
Agronomy	540/142 = 3.8	540/307 = 1.8
Humanities	6,770/275 = 24.6	6,770/381 = 17.8
Law	1,400/ 24 = 58.3	1,400/ 42 = 33.3
Social sciences	2,300/128 = 18	2,300/227 = 10.1
Total (non-rounded)	19,230/4,321 = 14.5	19,230/2,328 = 8.3

The average age of all permanent staff in Autumn 1965 was 44 (professors 54, associate professors 46, assistant professors 40). The average age of contract staff was 32. At the same date, 12 per cent of the permanent staff (155 people) were 60 or over and 30 per cent (396 people) 50 or over.

2. Average annual growth rates of enrolments 1956-1966

These rates were calculated from the figures supplied by the responsible authorities in answers to the "complementary questions" (Tables I and II in annex). They are summarised below in table D.

Table D
Average annual growth rates in numbers of teachers
and students in university-type institutions (1956-1966)

Field of study	Teachers				(in percentages) Students
	SL	ML	JL	Total	
Pure science	1.7	9.2	12.1	9.9	18.9
Technology	2.6	10.8	8.9	7.8	7.9
Agriculture	0.5	11.1	10.0	7.6	5.3
Medical sciences	4.3	- 2.0	5.4	3.6	5.7
Humanities	1.4	4.1	13.0	8.2	20.0
Law	1.9	4.4	11.7	4.9	10.0
Social sciences	10.2	13.8	23.0	18.9	18.4
Total	2.8	5.6	11.0	8.3	14.1

(1) NAVF: Utredningsavdelingen Statistisk oversikt over det vitenskapelig personale ved norske universiteter og høgskoler i 1965.

3. Structural changes in the teaching body

Table I in annex shows the percentage changes in the number of teachers at the various levels between 1956 and 1965. The figures in table E below cover all established and auxiliary full-time and part-time teachers.

Table E
Structural changes in the teaching body between 1956 and 1965
(as percentage of total teachers)

	1956-57			1965-66		
	SL	ML	JL	SL	ML	JL
Pure science	25.9	7.3	66.8	12.9	6.9	80.2
Technology	26.8	10.1	63.1	17.3	13.0	69.7
Agriculture	32.5	5.7	61.8	17.6	7.5	74.9
Medical sciences	27.2	24.9	47.9	29.0	15.2	55.8
Humanities	36.9	9.8	46.9	24.0	6.9	69.1
Education	40.0 (a)	6.7 (a)	53.3 (a)	16.1	10.7	73.2
Law	50.0	11.5	38.5	27.5	5.0	67.5
Social sciences	30.3	15.2	54.5	15.3	10.2	74.5
Total	30.6	12.5	56.9	19.1	9.9	71.0

Note: (a) Year 1958-59.

A statistical paper on teaching staff in universities and other higher educational institutes was published in Autumn 1965 (1). Some supplementary data have been extracted from it, and are summarised below.

In 1965, there were 1,321 established teachers in the Norwegian universities and other higher education institutes, of which 367 were professors, 176 associate professors and 778 assistants of various levels, distributed as shown in table F.

Eighty per cent of the professors, 54 per cent of the associate professors (middle level) and 17 per cent of the assistants (junior level) were doctors. The proportion of doctors out of the total body of established teachers was 38 per cent.

In addition to these 1,321 established teachers, there were 1,002 teaching staff composed of teachers working under contract and research personnel (2) (rekrytterings personale), bringing the total for the teaching body and research personnel in higher education to 2,323 (3).

(1) NAVF - Utredningsavdelingen - Statistisk oversikt over det vitenskapelig personale ved norske universiteter og høgskoler i 1965.

(2) Includes scholarship holders and assistants remunerated by the institution itself, or by the Science Councils.

(3) In Autumn 1965, the same paper gave an estimated figure of 19,500 (rounded) for the number of students, and inferred the student/established research and teaching staff ratio to be 14.8, and the student/total staff ratio as 8.4.

Table F
Composition of the teaching body, by level, in 1965

Field of Study	SL		ML		JL		Total	
	Absolute number	%	Absolute number	%	Absolute number	%	Absolute number	%
Pure science (Realfag)	64	21.5	31	10.4	203	68.1	298	100
Technology (Teknikh NTH)	64	26.6	42	17.4	135	56	241	100
Medical sciences (Medisin Odontologi)	85	39.9	42	19.7	86	40.4	213	100
Agronomy (Vet medi- sin NUH Land. vit skap NLH)	42	29.6	16	11.3	84	59.1	142	100
Humanities (Humaniora Teologi)	74	26.9	25	9.1	176	64	275	100
Law (Jus)	11	45.8	2	8.3	11	45.8	34	100
Social sciences (Samf. vitenskap Handelsfag NHH)	27	21.1	18	14.1	83	64.8	128	100
Total	367	27.8	176	13.3	778	58.9	1,321	100

III. Composition of the teaching body

Section II above gave absolute figures for teachers classified by level, and the percentage changes for each level between 1956 and 1965. The tables given show the more than proportional increase in junior level teachers, the average percentage rising from 57 to 71 per cent in nine years. The slowest growth occurred in the number of senior level teachers.

1. Proportion of women teachers

A breakdown of the teaching body by nature of appointment (permanent teachers, teachers under contract, or research staff), sex and field of study is given in table IV in annex. The average proportion of women in university teaching staff is 8.9 per cent (207 women teachers and directors of research). Women teachers and research directors constitute 12.6 per cent (126 women) of the temporary staff, and only 6.1 per cent of the established staff (81 women). The proportions are higher in the humanities (14.9 per cent), social sciences *(Samfunnvitenskole)* (14.8 per cent) and pure sciences *(Realfag)* (11.4 per cent). No women teachers or research directors are to be found in theology or in commercial science *(Handelsfag)*. The UNESCO "World Survey of Education" (Vol.IV) reckoned 76 full-time women teachers in 1961, compared with 1,299 full-time teachers, giving about 6.2 per cent of women teachers. This percentage was confirmed by the answers to the "complementary questions" which also pointed out that there had been little change in the proportion since 1945. Figures were supplied for the numbers of women teachers by field of study and by level. The percentages of women teachers in each field of study and at each level were then calculated from them. The proportion of senior level women teachers is seen to be very small, while the largest percentage is found at junior level. It is also confirmed by this second source that they are responsible for a larger share of teaching in the humanities, pure science and social sciences than in other fields.

2. Part-time teachers

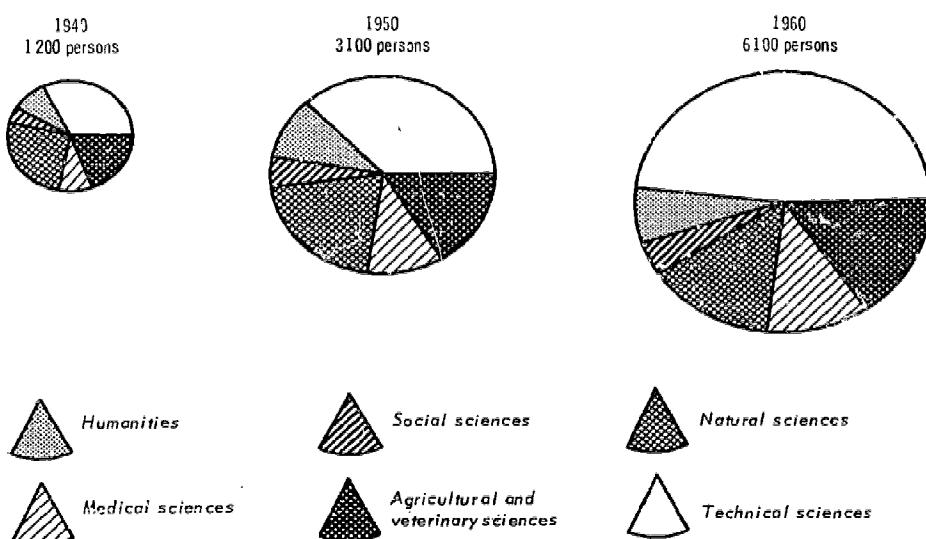
It should be possible to calculate the number of part-time teachers in 1960 by comparing table I in annex with table B in the text ("Full-time staff in university-type establishments in 1960"). The figure of 61 would thus be obtained. As, however, the two tables are based on very different sources, the number of part-time teachers shown may be an approximation rather than a precise figure. In any event, the proportion of part-time teachers seems to have been rather low - somewhere between 4 and 5 per cent.

IV. Conclusions

Generally speaking, the teacher/student ratios have changed slowly, both in total numbers and for each level of teacher. In the main fields of study, the average annual rate of increase in teaching staff is found to be higher than the rate for students only in agriculture and social sciences. Furthermore, in the latter case, this is due exclusively to the very sharp rise in the numbers of junior level teachers.

ANNEX I

FULL-TIME PERSONNEL ENGAGED IN HIGHER EDUCATION
AND RESEARCH WORK IN 1940, 1950 AND 1960



Source : Answers to "complementary questions" and Ministry of Education and Ecclesiastical Affairs.

(a) Senior Supervisor = SS
 (a) Senior Manager = SM
 (a) Senior Instructor = SI

Source : answers to "Complementary Questions" - Ministry of Education and Ecclesiastical Affairs.
Note : (a) Professors, M. Associate Professors, M. Other including research workers, Teachers and
Technicians in higher education, include the following courses : Pure Sciences : Pure Sciences at the Institute of Belo and Bezen, Faculty of Mathematics and Physics, Faculty of Veterinary Medicine, Faculty of Technology, Faculty of Agricultural Studies (Lato and Bezen), and Faculty of Veterinary Medicine, Faculty of Agricultural Studies (Lato and Bezen).
(b) Faculty of Agricultural Studies, Faculty of Veterinary Medicine, Faculty of Technology, Faculty of Agricultural Studies (Lato and Bezen), Faculty of Veterinary Medicine, Faculty of Agricultural Studies (Lato and Bezen).
(c) Faculty of Agricultural Studies, Faculty of Veterinary Medicine, Faculty of Technology, Faculty of Agricultural Studies (Lato and Bezen).
(d) Faculty of Agricultural Studies, Faculty of Veterinary Medicine, Faculty of Technology, Faculty of Agricultural Studies (Lato and Bezen).
(e) Faculty of Agricultural Studies, Faculty of Veterinary Medicine, Faculty of Technology, Faculty of Agricultural Studies (Lato and Bezen).
Include only Latinities and Humanities only Theology. All other courses are included in "Others".

Tous les cours dispensés par les Universités d'Oslo et de Bergen sont groupés dans la catégorie "Autres".

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Table II

STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS (a)
(Absolute figures and indexes)

Field of Spec. Year	PURE SCIENCE		TECHNOLOGY		MEDICAL SCIENCES		AGRICULTURE		HUMANITIES		LAW		SOCIAL SCIENCES		TOTAL	
	TOTAL	INDEXES	TOTAL	INDEXES	TOTAL	INDEXES	TOTAL	INDEXES	TOTAL	INDEXES	TOTAL	INDEXES	TOTAL	INDEXES	TOTAL	INDEXES
1955/56	836	97	517	95	869	91	334	101	1,377	93	600	102	330	109	5,663	96
1956/57	658	100	1,392	100	959	100	332	100	1,482	100	591	100	305	100	5,917	100
1957/58	1,056	123	1,587	114	1,002	104	404	122	1,738	117	525	89	279	92	6,591	111
1958/59	1,370 (b)	160	1,655	119	1,092	114	435	131	2,151 (b)	145	706	119	321	106	7,730	131
1959/60	1,712 (b)	199	1,733	124	1,057	110	416	125	2,567	175	735	124	350	116	8,570	145
1960/61	2,005 (b)	234	1,834	132	1,084	113	411	124	3,000 (b)	202	711	120	401	132	9,446	160
1961/62	2,387	278	2,018	145	1,157	121	437	132	3,729	252	767	130	444	147	10,939	185
1962/63	2,774	323	2,128	153	1,187	124	456	137	4,528	306	838	142	550	182	12,461	211
1963/64	3,308	385	2,282	164	1,352	141	480	145	5,531	373	1,005	170	768	260	14,746	249
1964/65	3,741	436	2,489	179	1,440	150	510	156	6,523	440	1,193	202	1,023	338	16,919	285
1965/66	4,078	475	2,751	198	1,528	159	546	164	7,691	519	1,390	235	1,381	426	19,365	327
1966/67																

Sources : For Technology, Ministry of Education and Ecclesiastical Affairs, for other fields, the main sources are: 1955/56 - 1957/58 : Statistical Yearbooks for Education published by the Central Bureau of Statistics (NOS, Undervisnings Statistikk); 1958/59 - 1965/66 : Council for Scientific and Social Research of Norway (Morges Almenritenskapelige Forskningsråd - NAVF) Report No. 3, 1967.

Notes : (a) For breakdowns see Table I. However, there are the following differences between Table I and Table II: Pharmacy is here included in Medical Sciences, not in Pure Sciences. Students enrolled in Teacher Training School (State College of Teachers) are included in their main field of study (Pure Science and Humanities).
(b) The distribution by type of study (Pure Science and Humanities) of students enrolled in Teacher Training School is estimated.

Table III
Female teachers by status and field of specialisation
in university institutions

Branch and status	Year	1955/1956		1960/1961		1965/1966	
		Absolute figures	% of all teaching staff	Absolute figures	% of all teaching staff	Absolute figures	% of all teaching staff
Pure science	SL	-	-	0	0	0	0
	ML	-	-	1	4.2	1	3.2
	JL	-	-	22	9.7	38	10.5
	T	-	-	23	7.6	39	8.7
Technology	SL	0	0	0	0	0	0
	ML	0	0	0	0	0	0
	JL	1	1.7	6	2.7	8	2.6
	T	1	0.7	6	1.9	8	1.8
Medical sciences	SL	0	0	0	0	0	0
	ML	0	0	0	0	1	2.2
	JL	7	15.6	8	7.4	18	10.8
	T	7	12.5	8	3.7	19	6.4
Agriculture	SL	0	0	0	0	0	0
	ML	0	0	1	12.5	1	5.6
	JL	4	6.1	4	4.4	8	4.5
	T	4	3.7	5	3.6	9	3.8
Humanities	SL	0	0	1	1.6	2	2.9
	ML	0	0	2	14.3	1	5.0
	JL	0	0	26	19.4	27	13.4
	T	0	0	29	13.7	30	10.3
Education	SL	-	-	1	14.3	1	11.1
	ML	-	-	1	25.0	3	50.0
	JL	-	-	1	5.0	0	0
	T	-	-	3	9.7	4	7.1
Law	SL	-	-	0	0	0	0
	ML	-	-	0	0	0	0
	JL	-	-	2	8.7	3	11.1
	T	-	-	2	4.5	3	7.5
Social sciences	SL	0	0	0	0	0	0
	ML	0	0	0	0	3	18.8
	JL	0	0	0	0	9	7.7
	T	0	0	0	0	12	7.6
Others	SL	3	1.9	-	-	-	-
	ML	3	6.5	-	-	-	-
	JL	34	12.7	-	-	-	-
	T	40	8.5	-	-	-	-
Total	SL	3	1.1	2	0.6	3	0.8
	ML	3	3.8	5	4.3	10	5.1
	JL	46	10.2	69	8.1	111	7.9
	T	52	6.5	76	5.9	124	6.3

Source: Answers to "complementary questions" W: 1, 2, 3.

Table IV

Teaching staff by sex and field of specialisation in university institutions - 1965

	Permanents			Auxiliaries			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Humanities	224 %	36 13.8	260 100	78 82.1	17 17.9	95 100	302 85.1	53 14.9	355 100
Pure science	280 %	18 6.0	298 100	218 82.6	46 17.4	264 100	498 88.6	64 11.4	562 100
Technology	235 %	6 2.5	241 100	184 93.0	23 7.0	197 100	419 95.5	19 4.5	438 100
Social sciences	97.5 %	8 9.6	83 100	69 80.2	17 19.8	86 100	144 85.2	25 14.8	169 100
Commercial sciences	45 %	0 -	45 100	13 100	0 -	13 100	58 100	0 -	58 100
Medical sciences	159 %	7 4.2	166 100	96 83.5	19 16.5	115 100	255 90.7	26 9.3	281 100
Dentistry	45 %	2 4.3	47 100	35 92.1	3 7.9	38 100	80 94.1	5 5.9	85 100
Veterinary science	42 %	1 2.3	43 100	30 90.9	3 9.1	33 100	72 94.7	4 5.3	76 100
Agricultural science	98 %	1 1.0	99 100	126 95.5	6 4.5	132 100	224 97.0	7 3.0	231 100
Theology	15 %	0 -	15 100	11 100	0 -	11 100	26 100	0 -	26 100
Law	22 %	2 8.3	24 100	16 88.9	2 11.1	18 100	38 90.5	4 9.5	42 100
Total	1,240 %	81 6.1	1,321 100	876 100	126 87.4	1,002 100	2,116 91.1	207 8.9	2,323 100

Source: Table II, 10, h.12/NAVF utredninger om Akademisk Arbetskraft.

Table V

Full-time academic, scientific and technological personnel at universities and state colleges in 1964, showing distribution by rank and by subjects

(Showing percentages in different ranks)

	Humanities (a)	Social sciences	Natural sciences	Life sciences	Technical sciences	Total all subjects
	Absolute figures	% Absolute figures	% Absolute figures	% Absolute figures	% Absolute figures	% Absolute figures
Professors (b)	69	24.2	45	23.2	44	13.7
Assistant professors (b)	28	9.8	24	12.4	28	8.7
Lecturers, amanuenses, curators (c)	149	52.1	80	41.2	140	43.6
Research assistants (b)	21	7.3	20	10.3	95	29.6
Research fellows (c)	19	6.6	25	12.9	14	4.4
Total, all ranks	286	100	194	100	321	100
					673	100
					418	100
						1,892
						100

Source: Answers to "complementary questions".

Notes: (a) Including theology. (b) Including 6 professors and 1 assistant not paid by Government grants.
(c) Estimates.

Table VI

	Showing percentages in different subjects
Professors (a)	69
Assistant professors (a)	28
Lecturers, amanuenses, curators (c)	149
Research assistants (b)	21
Research fellows (b)	19
Total, all ranks	286

Source: Answers to "complementary questions".

Notes: (a) and (b) : see notes (b) and (c) on preceding table.

Table VII
Part-time professors and assistant professors in 1964

	Humanities	Social sciences	Natural sciences	Life sciences	Technical sciences	Total
University of Oslo						
Professors	1	1	2	18	-	22
Assistant professors (a)	-	-	1	38	-	39
University of Bergen						
Professors	-	-	1	-	-	1
Assistant professors (a)	-	-	-	15	-	15
Institute of Technology						
Professors	-	-	-	-	2	2
Assistant professors (a)	-	-	-	-	6	6
State College for Teachers						
Professors	-	-	-	2		2
Total						
Professors	1	1	3	20	2	27
Assistant professors (a)	-	-	1	53	6	60

The independent Theological College employs 10 persons with university-level qualifications.

Source: Answers to "complementary questions".

Note: (a) Includes: "Amanuensis", "Dosents" and "Lektors".

Table VIII
Numbers of students per academic, scientific and technological position
(a) at universities and state colleges under the Ministry of Education

	1938	1946	1952	1956	1960	1962	1964
Students per position	11	12	7	7	8	8	9

Source: Answers to "complementary questions".

Note: (a) Academic, scientific and technological position.

NETHERLANDS

I. Criteria for the recruitment and promotion of teaching staff

In a study on university teachers in the Netherlands (1), Dr. P. Walstra has defined the main categories of the academic staff as follows:

- (1) Professors: full-time, members of the Senate and the Faculty in which they teach; many are heads of departments. In 1965 they were about 1,100.
- (2) Extraordinary professors: part-time only, but fulfilling the same functions as professors. There were about 300 of these in 1965.
- (3) Readers: lower in rank than professors; may be responsible for courses similar to those of professors, but rarely in charge of a department; not members of the Senate, but sometimes attend faculty meetings in an advisory capacity. There were about 350 of them in 1965.
- (4) In the same period there were about 2,500 scientific collaborators, normally attached to individual professors; they usually do more research than teaching. In the early '60's their teaching duties tended to increase appreciably owing to the shortage of senior level teachers.

There is no formal requirement for becoming a university teacher, even for senior level teachers. In practice, however, it is nearly always necessary to have a higher level university degree and to have carried out research or other individual work attesting to a wide knowledge in the field of the subject taught.

Answers to the "complementary questions" have shown that there were practically no university teachers without adequate qualifications.

Whether a post carries the rank of professor or reader depends on the relative importance of the subject taught rather than the qualifications of the person teaching it.

Promotion is possible only through appointment; it is not automatic. For professors and readers, there is no probationary period. Extraordinary professors are always appointed on a temporary basis.

A teacher may request leave of absence for one year to take up a post abroad, in particular, in the developing countries. In some cases this leave may be prolonged. No special regulations exist for foreign teachers appointed to a university in the Netherlands.

II. Trends in numbers of teachers and students in higher university education between 1951 and 1958

The numerical data on university teachers in the Netherlands are few and incomplete. However, they give a general idea of the situation between 1951-52 and 1958-59.

(1) The Recruitment and Training of University Teachers, 1967 (IAUPL).

The institutions considered in this study are those defined by Netherlands law as providing university education (1).

Moreover, it seems that the available statistics show only the number of senior level and middle level teachers. Professors ("gewoon hoogleraren", "buitengewoon" and "bijzonder") have been considered as senior level, "privat docenten", "lectoren" and "anders docenten" have been included with middle level teachers.

1. Student/teacher ratios and numbers

Tables I and II in annex show the number of senior and middle level teachers and student enrolments from 1950 to 1958.

However, some indication of the number of junior level collaborators may be found in Dr. Walstra's survey, where the number of scientific collaborators is estimated at 2,500.

In addition, answers to the "complementary questions" showed that 2,958 scientific assistants and collaborators were attached to the universities in 1958. It has not been possible to discover what proportion of these had teaching duties.

If these 2,958 persons are added to the 1,646 teachers shown for 1958, this gives a total university staff of 4,603. Although the student/teacher ratio based on this figure is not really satisfactory, it nevertheless seems more suitable for purposes of international comparison, especially with the Scandinavian countries where research and teaching duties are closely connected. In 1958 this ratio would therefore be 7.6.

Table A below gives the student/teacher ratios as calculated from tables I and II in annex.

Since, for most countries, it was not possible to correct for double counting, it seemed preferable to take into consideration - even though it is less precise - the sum of the teachers resulting from the addition of teachers by field of study.

All things considered, the two overall student/teacher ratios for senior and middle level teachers combined, after elimination of double counting, i.e. 23.2 in 1958 and 28.2 in 1950, give a better approximation to the real quantitative situation.

2. Annual average growth rates by field of study between 1950 and 1958

Table B below shows the growth in numbers of teachers and students for the period studied.

(1) In 1965/66, there were 12 institutions of this level:

- six universities: three State, one municipal and two private;
- three technical universities providing training in technology and architecture ("Technische Hogeschoolen");
- two universities providing training in economics and social science ("Nederlandse Economische Hogeschool te Rotterdam" and "Katholieke Hogeschool te Tilburg");
- one university specialising in agriculture ("Landbouwhogeschool te Wageningen").

One institution was created during the period under survey: the technical university at Eindhoven (in 1957/58).

In addition to these institutions, there is a College of Calvinist Theology in Kampen but in the absence of adequate statistical data, this institution has not been considered in the survey.

(Development of Higher Education, 1950-1967 - Statistical Survey , OECD, Paris, 1970).

Table A

Student/teacher ratios by field of study and level of teaching staff (senior and middle only) in university level higher education in 1950 and 1958

Field of study		S/SL	S/ML	S/Total
Pure science	1950	29.8	31.1	17.4
	1958	31.3	50.4	19.3
Technology	1950	49.7	181.1	39.0
	1958	36.6	98.0	26.6
Medical sciences	1950	82.6	127.3	50.1
	1958	42.2	53.4	23.6
Agriculture	1950	32.3	46.2	19.0
	1958	20.1	30.4	12.1
Humanities	1950	18.9	46.1	13.4
	1958	29.4	56.8	19.4
Law	1950	42.8	135.5	32.5
	1958	26.8	84.6	20.3
Social sciences	1950	46.0	94.4	31.0
	1958	38.3	80.3	25.9
Total	1950	39.3	82.1	26.6
	1958	32.7	61.4	21.4

Table B

Annual average growth rates in numbers of university staff and students (1950-58)

(in percentages)

Field of study	Teachers			Students
	SL	ML	Total SL + ML	
Pure science	5.2	4.0	4.8	5.8
Technology and architecture	6.1	10.3	7.2	7.2
Medical sciences	8.0	6.5	5.4	-3.1
Agriculture	3.9	3.2	3.6	-2.1
Humanities	3.5	6.6	4.5	9.4
Law	3.2	3.2	3.2	-2.6
Social sciences	3.6	3.8	3.7	1.5
Total	4.5	5.9	4.9	2.1

A general tendency for senior and middle level staff to increase relatively faster than students between 1950 and 1958 can be observed.

Exceptions to this general trend will be noted for pure science, for senior level staff in technology and for the humanities.

It did not seem opportune to deal at this point with structural changes in the teaching profession owing to the lack of data on junior level teachers. As an indication, however, the proportions of senior and middle level teachers in total teaching staff for 1950 and 1958 are given in table C.

Table C

Structural changes in the teaching staff for university type higher education
(1950 and 1958)

(in percentages)

Status		SL	ML
Field of study			
Pure science	1950	59.6	40.4
	1958	61.6	38.4
Technology	1950	78.5	21.5
	1958	72.8	27.2
Medical sciences	1950	60.6	39.4
	1958	55.9	44.1
Agriculture	1950	58.8	41.2
	1958	60.2	39.8
Humanities	1950	70.9	29.1
	1958	65.9	34.1
Law	1950	76.0	24.0
	1958	76.0	24.0
Social sciences	1950	67.2	32.8
	1958	67.7	32.3
Total	1950	67.6	32.4
	1958	65.2	34.8

Source: see table I, annex I.

Although non-university level higher education exists in the Netherlands (in 1961-62 there were 44,928 students in the public and private teacher training colleges, and 23,262 students in the public and private technical colleges) it has not been possible to obtain adequate material on the staff teaching in these schools.

III. Composition of the teaching body

The first point to note is that according to answers to the complementary questions, "no information is available concerning a possible shortage of teachers in the universities."

For most of the countries studied the available data have made it possible to cite the vital role played by junior level teachers in meeting requirements. The figures available for the Netherlands do not cover junior level teachers. It is therefore to be feared that our analysis of the composition of the teaching body will be very incomplete.

1. Proportion of women teachers

According to UNESCO figures there were 1,517 teachers in 11 public and private universities in 1958-59. Of these 50 were women. The percentage of women teachers was therefore 3.3.

According to answers to the "complementary questions" there were 24 women teachers in the humanities, nine in pure science, six in medical sciences, four in technology, four in agriculture and two in social sciences. The part played by women teachers in higher education seems to have increased hardly at all since 1950.

2. Part-time teaching and overtime

In answers to the "complementary questions", it also emerged that several university teachers also teach more often than not in other non-university higher education institutions.

It was not possible to ascertain the part played by overtime.

Finally, according to Dr. P. Walstra (1), the recruitment of staff is influenced by certain discriminatory factors such as sex, race, social origin, and the religious or political views of the candidate. However in some fields of study (such as technology, for instance), the shortage of competent candidates has led to a partial relaxation of initial requirements.

IV. Conclusions

In short, trends in student numbers in the Netherlands have varied greatly according to the fields of study considered. Growth seems to have been particularly rapid in technology and the humanities. On the other hand, the number of students in the medical sciences, agriculture and law has fallen. This explains the fairly limited increase in the total number of students between 1950 and 1958.

The total number of senior and middle level teachers increased by 45 per cent between 1950 and 1958. This increase in the number of teachers has been an essential feature in all fields of study. In the least favourable fields it was nearly 30 per cent in eight years. It is curious to observe that in medical sciences, agriculture and law the increase in teaching staff was often quite large compared to the other fields of study, whereas student numbers in these subjects decreased.

(1) The Recruitment and Training of University Teachers, 1967 (IAUPL).

ANNEX I
Table I

Teaching staff by status and field of specialisation in university institutions
(full-time and part-time)

(SL and ML teachers only)

Field of specialisation Year	Pure science	Technology			Medical sciences			Agriculture (a)			Humanities (b)			Law			Social sciences (c)			Total	
SL	ML	T	SL	ML	T	SL	ML	T	SL	ML	T	SL	ML	T	SL	ML	T	SL	ML	T	
1950-51	115	78	193	113	31	144	94	61	155	50	35	85	227	93	320	76	24	100	82	40	122
1955-56	146	100	246	130	44	174	125	107	232	62	42	104	260	137	397	93	31	124	101	61	162
1958-59	172	107	279	182	68	250	143	113	256	68	45	113	299	155	454	98	31	129	111	53	164

Source: Statistiek van het Wetenschappelijk Onderwijs and Answers to "complementary questions".

Notes:

- (a) Includes agriculture and veterinary sciences;
- (b) Includes humanities, philosophy and theology;
- (c) Includes political, social and economic sciences;
- (d) The second figure was supplied by the Central Bureau of Statistics and corresponds to the actual number of teachers.

INDEXES									
1950-51	100	100	100	100	100	100	100	100	100
1955-56	127	121	150	124	122	124	124	124	124
1958-59	145	174	165	133	142	129	134	134	144

Note: (e) The first index corresponds to total: SL + ML; the second index was supplied by the Central Bureau of Statistics (see note (d) above).

(d)

(e)

(f)

(g)

(h)

(i)

(j)

(k)

(l)

(m)

(n)

(o)

(p)

(q)

(r)

(s)

(t)

(u)

(v)

(w)

(x)

(y)

(z)

Table II - Absolute figures and indexes
Student enrolments in university institutions

Field of specialisation	Years	1950/1951		1955/1956		1958/1959	
		Absolute figures	Indexes	Absolute figures	Indexes	Absolute figures	Indexes
Pure science		3,424	100	4,283	125	5,392	157
Technology and architecture		5,615	100	5,062	90	6,661	119
Medical sciences		7,765	100	6,335	82	6,031	78
Agriculture and veterinary science		1,616	100	1,278	79	1,370	85
Humanities		4,289	100	6,314	147	8,800	205
Law		3,251	100	2,538	78	2,623	81
Social sciences		3,776	100	3,832	101	4,254	113
Total		29,736	100	29,642	100	35,131	118

Source: See table I.

PORUGAL

I. Criteria for the recruitment and promotion of teaching staff

In Portuguese universities the various levels in the academic hierarchy are, in ascending order, as follows:

Assistants: who have generally taken a first degree ("Licenciatura"); if they hold a doctor's degree they can be appointed senior assistants.

Associate professors are recruited by public competitive examinations open to holders of a doctor's degree in the relevant branch of study. Attainment of an adequate standard in this examination qualifies those candidates who are not selected as associate professors for the title of "agregado".

Recruitment to posts of full professor is also by public examination, which is open to associate professors with at least two years' teaching experience, full professors of other chairs, and lecturers or doctors who have specialised in the relevant subject.

In the case of scholars or artists of established reputation, chairs may be awarded without examination.

Professors may not exercise public functions other than teaching but they have the right to take up or to continue to pursue an outside professional activity. This means that in practice many teachers engage in parallel activities, and sometimes devote too little time to teaching. It has been suggested that the main reason for this state of affairs is the low rates of pay accorded to university staff.

Full professors give courses, direct practical work and do research. Associate professors do not always give regular courses, but otherwise their functions are similar to those of full professors. The duties of the assistants vary widely, and largely depend on the needs of the moment and what the head of the department gives them to do.

II. Trends in numbers of teachers and students in higher education

No distinction has been made between university and non-university higher education in Portugal. It has not been possible to make a statistical breakdown by level of teachers except partially for the period 1964-65.

1. Student/teacher ratios and numbers

Total numbers of teachers and students for the period 1956-66 are given in tables I and II in annex. Table III in annex shows the number of professors and other teachers in 1964 by field of study. The latter figures are rather different from those for the same year in table I. Divergencies are particularly pronounced in the humanities, fine arts and the social sciences. It is not known why this is so.

Table A below shows trends in student/teacher ratios between 1956 and 1966.

2. Annual average rates of growth in staff and student numbers in higher education

In order to keep the statistical series homogeneous and obtain really representative growth rates, the period from 1957 to 1966 has been chosen. The rates are shown in table B.

3. Breakdown by level of teachers

An approximate idea of this breakdown will be found in table III in annex for 1964-1965 and is given below for 1961-1962.

Table A

Student/teacher ratios in higher education
overall and by field of study in 1956 and
1966 (a)

	1956	1966
Pure science	19.8	21.4
Technology	16.1	17.1
Medical sciences	15.1	12.3
Agriculture	7.7	10.9
Humanities	(1957) 10.3 (b)	17.4
Education	7.4	3.5
Fine arts	(c)	(c)
Law	5.0	7.2
Social sciences	8.3	20.6
Other subjects	9.1	7.1
Total	(1957) 13.4 (d)	16.6

Source: Tables I and II in annex.

- Notes:
- (a) The reservations and comments accompanying tables I and II in the annex also apply to this table.
 - (b) Owing to certain changes in the method of compiling statistics of teachers in the humanities (see note (a) to table I in annex), the student/teacher ratio for 1957 is considerably lower than that for 1956 (79.5). This is why 1957 and not 1956 was chosen as the beginning of the period.
 - (c) Owing to these constant statistical changes the student/teacher ratios are not significant here except for the period 1960-65 (4.6 and 5.4).
 - (d) In 1950 the student/teacher ratio was 22.6. Owing to a number of changes in the method of compiling statistics on teachers (see note (a) to table I in annex), the ratio for 1956 is probably meaningless.

Table B

Annual average growth rates by field of
study for staff of all levels and students
(1957-1966)

(in percentages)

	Teachers	Students
Pure science	8.8	8.5
Technology	4.0	4.0
Medical sciences	4.4	2.5
Agriculture	1.9	5.8
Humanities	1.5	7.5
Education	(1959-66) 5.3	16.8
Fine arts	0.6	0.9
Law	1.4	4.6
Social sciences	5.1	16.1
Other subjects	4.1	1.7
Total	4.1	6.6

Table C
 Teaching staff - breakdown by categories
 (1961-1962)

Higher education	1961-62
<u>Categories</u>	<u>%</u>
Full professors ("catedraticos")	25.3
Extraordinary professors ("extraordinarios")	7.8
Professors under contract ("contratados")	3.1
Senior assistants	18.5
Junior assistants	43.2
Teachers of foreign languages	2.1

Source: MRP Report/Portugal, OECD, Paris (1966);
 (CEEE School Survey, 1962).

III. Composition of the teaching body in higher education in the early 'sixties

The MRP report by the OECD in 1966 drew attention to the shortage of teachers. To help relieve the situation, a large number of assistants were appointed, but these are not qualified to give courses.

1. The shortage of teachers

"The shortage of teachers is so acute that students sometimes have to be asked to act as assistants. This means that the staff is insufficient and badly adapted to the present needs, while at the same time posts remain empty, waiting to be filled by qualified teachers or teachers from other categories".(1) Indeed, according to the same survey, only 39 per cent of posts offered to the extraordinary professors were filled in 1966, whereas over 40 per cent of the teaching body are junior assistants, a percentage far higher than that provided for under the legislation.(2)

"Potential candidates are put off by the long period of study and the many competitive examinations leading to the top university posts. In addition the salaries are relatively low, particularly if compared with those offered by many public and private organisations. Consequently most of the teachers yield to the temptation to spend some, if not most, of the time doing work outside the university. Sometimes when fellowships are inadequate or impossible to obtain, teachers will give extra classes to the detriment of their main teaching or research work."

"This teacher shortage means that many have to give extra classes and the number of students to each teacher rises considerably. The survey showed that it is at this level that teachers are the most overloaded in spite of the fact that they are required to teach relatively few hours per week.(3) Indeed, an established professor who apart from his lectures directs practical work is only obliged to do a minimum of statutory hours, i.e. from one to three hours. The "extraordinarios" have to teach for six hours a week and also take charge of practical work. The assistants teach for twelve hours a week (practical work) but in actual fact do much more as they are asked to give lectures as well because of the shortage of teachers."(4)

(1) MRP Report/Portugal, OECD, Paris (1966).

(2) See table F.

(3) See table E.

(4) MRP Report/Portugal, OECD, Paris (1966).

The following tables are based on a survey of higher education institutions carried out in 1962:

Table D

Teaching staff
Breakdown by hours taught per week

Higher education	1961-62
<u>Number of hours of teaching</u>	<u>%</u>
3 or less	16.0
4 to 6	21.9
7 to 9	10.8
10 to 12	24.2
13 to 15	7.5
16 to 18	9.6
19 and more	10.0

Source: MRP Report/Portugal, OECD, Paris (1966);
(CEEE School Survey, 1962).

Table E

Teaching staff
Breakdown by degree of intensity of teaching duties

Higher education	1961-62
<u>Degree of intensity of teaching duties</u>	<u>%</u>
Excessive	43.4
Full-time	32.1
Part-time	24.5

Source: MRP Report/Portugal, OECD, Paris (1966);
(CEEE School Survey, 1962).

Table F

Teaching staff
Percentage of posts filled by a particular level of teaching staff

Higher education	1961-62
<u>Categories</u>	<u>%</u>
Full professors ("catedraticos")	72.6
Extraordinary professors ("extraordinaries")	39.2
Senior assistants	93.0
Junior assistants	266.9
Teachers of foreign languages	180.0

Source: MRP Report/Portugal, OECD, Paris (1966);
(CEEE School Survey, 1962).

These summary figures emphasize the seriousness of the quantitative situation in 1961-62.

It is difficult to say whether there was a quantitative deterioration during the period 1950-1960. At least, the student/teacher ratio which was already very high in 1950 did not greatly increase during this decade as will be seen from the following table:

Table G
Trend in the student/teacher ratio

Higher education	
<u>Year</u>	<u>Ratio (a)</u>
1950/51	17.8
1951/52	18.7
1952/53	18.9
1953/54	18.9
1954/55	18.5
1955/56	19.0
1956/57	20.0
1957/58	20.4
1958/59	19.8
1959/60	19.2
1960/61	20.5

Source: See source for preceding tables.

Note: (a) In the academic years 1954-55, 1955-56 and 1960-61 the figures for music and dramatic arts were included in the calculations for the ratio.

There are, however, grounds for believing that this ratio was maintained in the neighbourhood of 20 largely owing to the increase in the number of assistants who, in view of the shortage of qualified staff, were sometimes assigned duties they were not qualified to undertake.

It should also be noted that the student/teacher ratio in the private sector is definitely lower (about 5). But this sector provides religious education given by teachers who devote only part of their time to it. There is consequently little significance in this ratio as a reflection of the real student/teacher ratio.

2. Proportion of women teachers

In the "World Survey of Education" (Vol.IV) UNESCO has examined the quantitative trend among students and teachers in 20 universities and university-type institutions awarding equivalent degrees. This trend is summarised in table H for the period 1957-58/1960-61.

Table H

Numbers of teachers and students and proportion
of women teachers in university institutions

	Number of institutions	Full-time and part-time teachers	Full-time and part-time students
1960/61	20	882 (including 96 women)	19,761
Public university-type institutions	7	277 (including 7 women)	4,658
State universities	13	605 (including 89 women)	15,103
1959/60	20	867	18,318
1958/59	20	805	17,189
1957/58	20	750	16,312

According to this table, the student/teacher ratio increased from 21.7 in 1957 to 22.4 in 1960. Moreover, the percentage of women teachers was 2.5 per cent in the public university-type institutions, 14.7 per cent in the universities, and 10.9 per cent in the 20 institutions included in the 1960 UNESCO survey.

IV. Conclusions

The trends in numbers of teachers and students in higher education between 1956 and 1966 show a certain increase in the student/teacher ratio. This increase is particularly noticeable in agriculture, the humanities, education, law and social sciences.

According to a survey of teaching institutions in 1962, over 40 per cent of the teaching staff were overburdened with teaching duties. This means they were teaching more than the number of hours established by law.

TEACHING STAFF BY FIELD OF SPECIALISATION IN ALL HIGHER EDUCATION PERSONNEL ENSEIGNANT PAR BRANCHE DANS LES ÉTABLISSEMENTS D'ENSEIGNEMENT SUPERIEUR

Country : PORTUGAL
 Pays :
 Table : I - Absolute figures & Indexes
 Tableau : I - Chiffres absolus & Indices

Field of specialization/ Branche	Year/ Année	TOTAL																	
		SCIENCE SOCIALES			SCIENCE SOCIALES			AUTRES			SCIENCE SOCIALES								
EDUCATION		FINE ARTS		LAW		TECHNOLOGY		HUMANITIES		AGRICULTURE		MEDICAL SCIENCES		TECHNOLOGY		SCIENCE PURAS			
T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND	T	IND		
1955/57	141	102	128	101	253	97	62	107	(a)	{a}	14(b)	95	82	42	93	150	91	94	94
1955/58	138	100	127	100	250	100	58	100	486	100	17(f)	116	100	45	100	175	100	100	1523
1958/59	148	107	124	98	289	111	60	103	(a)	{a}			50	43(d)	44	98	207	118	100
1958/60	154	102	118	93	321	123	64	110	460	95	79(c)	100(a)	79	68	50	111	175	99	107
1959/61	172	125	122	96	333	128	63	109	469	97	78(c)	99(c)	77	66	45	100	173	98	113
1959/62	183	133	134	106	359	138	60	103	516	106	B3(c)	105(c)	87	75	50	111	162	92	127
1959/63	203	147	136	107	368	142	60	103	552	114	85(c)	108(c)	97	84	47	104	183	104	137
1959/64	224	152	157	124	374	144	68	117	529	109	86(c)	109(c)	98	84	49	109	200	114	146
1959/65	282	204	164	129	370	142	69	119	515	117	117(c)	120(c)	104	90	51	113	224	127	141
1959/66	284	206	164	129	389	150	68	117	527	108	110(c)	139(c)	115	99	52	116	257	146	141
1959/67	294	213	180	142	381	147	669	119	554	114	114(c)	144(c)	122	105	51	113	276	157	143

Source : Answers to "Complementary questions".
Notes : (a) A statistical change has occurred.

Source : Answers to "Complementary Questions".
Notes: (a) A statistical change was occurring in 1957. This conclusion

Source : Réponses aux Questions complémentaires.

en 1957, ce qui explique le brusque accroissement apparaissant du corps enseignant cette année là.

(b) N'inclut pas les écoles normales secondaires. Inclut le personnel enseignant du cours des professeurs et moniteurs

(c) Inclut le cours des moniteurs des écoles d'Éducation physique;

(d) N'inclut pas les établissements d'enseignement artistique supérieur.

(e) Pour les années 1950/51 à 1955/56 le nombre total des enseignants a évolué comme suit :

W'inclut pas les établissements d'enseignement artistique supérieur et l'Ecole

1953/54 = 841) de marine.
1954/55 = 853) N'inclut pas les établissements d'enseignement

ment artistique supérieur, l'École de médecine et les Écoles normales secondaires, l'Institut d'Éducation physique et les écoles des beaux-arts.

Table II

STUDENT ENROLMENTS IN ALL HIGHER EDUCATION
(Absolute figures and indexes)

Field of Special. Year	PURE SCIENCE(a) TO-TAL	TECHNO- LOGY(b) TO-TAL	MEDICAL SCIENCE(c) TO-TAL	AGRI- CULTURE(d) TO-TAL	HUMA- NITIES(e) TO-TAL	EDUCA- TION(f) TO-TAL	FINE ARTS(g) TO-TAL	LAW(h) TO-TAL	SOCIAL SCIENCES(i) TO-TAL	OTHER(j) TO-TAL	IND- EXES TOTAL(k)
1956/57	2,790	93	2,055	94	3,821	101	480	107	5,091	101	104 (1)
1957/58	3,016	100	2,175	100	3,756	100	449	100	5,031	100	171 (1)
1958/59	3,405	113	2,191	101	3,786	101	480	107	5,147	102	315 (1)
1959/60	3,974	132	2,184	100	3,676	98	497	111	5,350	107	324 (1)
1960/61	4,562	151	2,312	106	3,610	96	551	123	5,973	119	359 (1)
1961/62	5,205	173	2,178	100	3,446	92	565	126	6,472	129	390 (1)
1962/63	5,556	184	2,310	106	3,377	90	594	132	7,055	140	349 (1)
1963/64	5,861	194	2,449	113	3,502	93	623	139	7,658	156	389 (1)
1964/65	6,129	203	2,488	114	3,677	98	651	145	8,538	172	357 (1)
1965/66	6,230	207	2,766	127	4,259	113	731	163	9,233	184	594 (1)
1966/67	6,292	209	3,064	142	4,701	125	752	167	9,534	191	399 (1)

Source : Answers to "complementary questions".

Notes : (a) Science faculties;
(b) Includes courses at the Institute of Technology
and at the Faculty of Technology;

(c) Includes courses at the Faculty of Medicine,
the Faculty and various Schools of Pharmacy and the
technical schools for nurses;

(d) Includes courses at the Institute of Agronomy and
at the School for Veterinarians; Philosophy, Theology
(e) Includes Schools of Humanities, Philosophy, Theology
of confessional Universities and the Pontifical
Faculty of Philosophy;

(f) Includes secondary teacher Training Schools and
Schools for Physical Training.

(g) Includes schools for Fine Arts and some Institutes for Artistic Studies;

(h) Faculties of Law;

(i) Includes courses at the Faculty of Economy from the Institute for Economic
and Financing Sciences, from the Institute of Social Sciences and
Overseas Policy, from the Institute of Social Services and the School for
Scientific Organisation of Work;

(j) Includes Nautical and Navy schools and the Military Academy;

(k) Architecture does not appear in this Table, the results being unknown;
moreover, for the years 1950/51 to 1952/53, the students enrolments are
the following: 1950/51 = 16,184; 1951/52 = 16,667; 1952/53 = 16,864;
1953/54 = 17,562; 1954/55 = 18,345; 1955/56 = 19,070.

(l) Includes courses at secondary level for Physical Training.

Table III

Teaching staff by status and field of specialisation in university institutions
(detailed figures for 1964/65)

	SL	1964/1965	
		Total	Percentages
Pure science	ML+JL	63	26.3
	T	177	73.7
		240	100.0
Technology	SL	40	25.2
	ML+JL	119	74.8
	T	159	100.0
Medical sciences	SL	101	29.8
	ML+JL	238	70.2
	T	339	100.0
Agriculture	SL	37	58.7
	ML+JL	26	41.3
	T	63	100.0
Humanities	SL	26	19.1
	ML+JL	110	80.9
	T	136	100.0
Fine arts	SL	-	-
	ML+JL	13	100.0
	T	13	100.0
Law	SL	22	43.1
	ML+JL	29	56.9
	T	51	100.0
Social sciences	SL	30	28.6
	ML+JL	75	71.4
	T	105	100.0
Total	SL	319	28.8
	ML+JL	787	71.2
	T	1,106	100.0

Source: Answer to "complementary questions" - Planeamento da investigação em relação com o desenvolvimento económico (projecto das equipas piloto).

UNITED KINGDOM

Criteria for the recruitment and promotion of teaching staff (1)

There are no precise rules for the recruitment of university teachers. They must simply possess the qualifications and specialisations needed to fulfil their duties at the university. Each university selects its staff according to its own criteria, so that any teacher appointed to a post can be presumed to be adequately qualified. The qualifications asked for usually relate exclusively to the subject to be taught, and there is no insistence on an advanced level of study on a broader front or previous teaching experience. Universities tend to recruit their teaching staff from people with "a good honours degree", the reference being to a first degree. Many of these teachers have already passed examinations at a higher level or will do so subsequently (2).

A university teacher is on average 26 years old when first appointed. He does a three-year probationary period as an assistant or assistant lecturer, after which he is usually appointed as lecturer. From then on a university career is normally open to him and promotion thereafter virtually automatic, although the speed of advancement may vary.

In practice, the average age for appointment to reader is about 40. The retirement age is 65 in England and 70 in Scotland.

The Robbins Report (3) classified the qualifications of teachers (for the period 1961-62) by major fields of study:

	Percentage of doctorates	Percentage of Master's degrees	Percentage of First degrees
Humanities	29	19	52
Social sciences	24	20	56
Science	72	7	21
Applied science	45	17	38
Medical sciences	48	9	43

Source: Robbins Report, Appendix 3, table 17.

This table shows that the further qualification of a doctorate is far more essential in scientific and technological fields than in the humanities or social sciences.

Furthermore, doctoral theses in the humanities, philosophy, law and social sciences often call for much lengthier and more detailed work than in fields such as medicine (4).

Almost all university teachers in the United Kingdom work on a full-time basis, except those teaching medical subjects, who are often specialists and do not confine their activities to teaching. In architecture and law there is likewise frequently a demand for practising

(1) Answer to "complementary questions".

(2) Studies done in Irish universities are also included here.

(3) Higher Education - Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins, 1961-63 - London (HMSO).

(4) Sources: M.J. Crook: The Status of University Teachers in the United Kingdom (IAUPL). F.T.J. Fletcher: The Recruitment and Training of University Teachers (IAUPL).

experts who are well-known in their particular field. Furthermore, in science and some specific fields in the arts, part-time staff appointments are made at junior level from among young graduates who are engaged in special research or studies at a higher level. The full-time staff consists for the most part of professors and lecturers of the various categories (senior or middle level teachers).

Great Britain

I. Trends in numbers of teachers and students

A. University education

1. Student/teacher ratios and numbers

Tables I and II in annex show the numbers of teachers and students in the years 1953 to 1966. It is important to note straight away that the classification of teachers seems to have undergone radical changes in 1965-1966, and the statistical series generally seems to have been deliberately interrupted in 1964.

Furthermore, the numerical data on teachers in table I in annex relate solely to full-time teachers who make a direct and important contribution to academic work (teaching and/or research) and those posts are wholly financed by the university.

In table A the student/teacher ratios have therefore been calculated for three years: 1953 and 1964 (the beginning and end of the period studied separately) and 1966. The ratios shown for 1966 should not be compared with those for the earlier years.

Table A

Full-time student/full-time teacher ratios by field of study
and level of teaching staff in universities, 1953, 1964 and
1966 (a)

Field of study		S/SL	S/ML	S/JL	S/SL+ML	S/Total
Pure science	1953	60.4	11.8	33.5	9.9	7.6
	1964	67.7	11.6	33.0	9.9	7.6
Physical sciences (b)	1966	99.7	13.8	56.9	12.1	10.0
Physical sciences + biological sciences (b)	1966	74.5	10.7	42.7	9.4	7.7
Technology	1953	86.5	11.7	53.4	10.3	8.6
	1964	87.7	12.0	56.8	10.5	8.9
	1966	140.7	14.5	138.4	13.1	12.0
Medical sciences	1953	55.4	12.6	35.2	10.2	7.9
	1964	38.2	8.5	27.9	6.9	5.6
	1966	35.5	8.6	36.1	7.2	6.0
Agriculture	1953	60.0	10.6	8.8	9.0	4.5
	1964	51.1	7.2	9.6	6.3	3.8
	1966	54.9	7.1	25.2	6.3	5.0
Humanities	1953	57.8	16.4	48.1	12.8	10.1
	1964	68.6	15.3	53.8	12.5	10.1
(c) 1966	58.9	11.8	35.8	9.8	7.7	
Social sciences	1959	74.4	20.1	76.6	15.8	13.1
	1964	67.7	15.5	44.3	12.6	9.8
	1966	91.2	16.0	52.3	13.6	10.8
Total (d)	1953	60.4	13.5	36.3	11.1	8.5
	1964	63.8	12.3	38.2	10.3	8.1
	1966	69.8	10.8	46.2	9.4	7.8

Notes: (a) The bases for drawing up the data were changed as from 1965/1966. There are some disparities between teachers and students in the breakdowns by field of study. The figures for this year are therefore difficult to compare with those of 1953 and 1964.

(b) As the basis for calculating the figures was changed as from 1965, these two subjects were introduced at this date in place of pure science. Hence, rates were calculated for physical sciences and for physical sciences + biological sciences, as the latter appeared more comparable with the ratios calculated for pure science in 1953 and 1964.

(c) The humanities included education up to 1964-65, but there are separate statistics for education as from 1965-1966.

(d) As there was no breakdown by field of study for part-time students, overall student/teacher ratios could not be calculated. However, these ratios for the overall totals are given below for comparison:

1953 S/SL: 72.2 S/ML: 16.2 S/JL: 43.4 S/ML+SL: 13.2 S/T: 10.1
 1964 S/SL: 72.1 S/ML: 13.9 S/JL: 43.2 S/ML+SL: 11.7 S/T: 9.2
 1966 S/SL: 76.1 S/ML: 11.8 S/JL: 50.3 S/ML+SL: 10.2 S/T: 8.5

Supplementary information

The UGC (1) was able to calculate other student/teacher ratios for the 1964 autumn term, covering all universities in the United Kingdom except Oxford, Cambridge and the New Universities. They are summarised in the following table:

Table A'

Student/teacher ratios calculated by the UGC for 1964

	Humanities (1)	Social sciences (2)	(1) + (2) (3)	Science (4)	Medical sciences and dentistry (5)	All (excluding medical sciences) (6)	All subjects (7)
Unweighted ratios	9.8	8.8	9.5	7.1	5.6	8.1	7.6
Weighted ratios (a)	10.6	13.0	11.2	9.8	6.9	10.7	9.9

Note: (a) The weighting is that adopted by the UGC. Post-graduate students in humanities and social sciences receive the coefficient 2 and those reading scientific and medical sciences subjects have the coefficient 3, while all other students have the coefficient 1.

Source: Fifth Report from the Estimates Committee, HMSO 1965, Appendix I, Cambridge University.

The following ratios were established for Oxford University:

Table A''

Student/teacher ratios at Oxford University in 1964

	Humanities (1)	Social sciences (2)	(1) + (2) (3)	Science (4)	Medical sciences (5)	All (excluding medical sciences) (6)	All subjects (7)
Unweighted ratios	10.2	13.2	10.9	8.7	4.5	10.1	9.6
Weighted ratios	11.7	16.0	12.7	13.5	5.9	13.0	12.3

The general trend is summarised in Table A''' of ratios calculated by the UGC. This table covers all universities except Oxford and Cambridge (which, the UGC claim, do not show any basic differences from other universities in this connection):

Table A'''

Number of students/total teaching staff at all levels

	1938/39	1958/59	1963/64
Humanities and social sciences	11	8	8.4
Pure science)		7	7
Applied sciences)	5.7	9	8
Medical sciences	28.6	6	5

(1) University Grants Committee.

The UGC expressed some concern about the trend in full-time teacher/student ratios in the following fields of study: the humanities, social sciences, pure and applied sciences. This ratio had improved slightly between 1938 and 1954 (1/7.9 and 1/7.6) but deteriorated between 1954 and 1961 (1/8.4). If the specific UGC weighting is applied, the staffing ratios are even more unfavourable: 1/10.5 in 1938-39, 1/9.3 in 1954-55 and 1/10.9 in 1961-62.

Furthermore, the creation of posts for senior level teachers was apparently curbed by a decision in 1947 to limit the sum total of salaries paid to these teachers in each university to a maximum of 35 per cent of the salaries paid to the rest of the teaching staff. One of the results of this ruling was to restrict the promotion prospects of university teachers and to weaken the ratio between professors and other teaching staff (1/4.12 in 1938-39 and 1/7.40 in 1961-62).

However, such considerations should not obscure the fact that the university student/teaching staff ratio is particularly good in the United Kingdom in comparison with most other industrialised countries (1).

2. Annual average numerical growth rates of university teachers and students

The rates summarised in the following table show that the overall growth rates for teachers and students were similar but that at junior and senior levels those for teachers increased more slowly than those for students.

Table B

Numerical growth rates for teachers and full-time students broken down by field of study and level of teaching staff
(1953-1964)

(in percentages)

Field of study	Teachers			Total	Students
	SL	ML	JL		
Pure science	6.2	7.5	7.4	7.3	7.3
Technology	6.5	6.4	6.0	6.3	6.6
Medical sciences	3.8	4.0	2.4	3.6	0.3
Agriculture	2.3	4.4	0.0	2.3	0.9
Humanities	(a) 1.4	(a) 4.3	(a)-2.3	(a) 2.5	
	(b) 4.4	(b) 5.9	(b) 9.7	(b) 6.2	2.2
	0.6	2.9	4.3	2.8	
Social sciences (1959-64)	13.0	16.8	24.0	17.4	10.9
Total	(c) 4.0	(c) 6.3	(c) 2.6	(c) 5.1	5.1

Notes: (a) 1953-1958.
(b) 1958-1964.
(c) 1950-1964.

(1) In fact, the Robbins Report gave the following table for 1960:

United Kingdom	:	8
France	:	30
Germany	:	35
Netherlands	:	14
Sweden	:	12
United States	:	13
USSR	:	12

3. Structural changes in the teaching body

Table C confirms, under another form, the above results.

Table C

Structural changes in the teaching body
(1953, 1964, 1966)

(as percentage of total teachers)

Field of study \ Level		SL	ML	JL
Pure science	1953	12.6	64.6	22.8
	1964	11.2	65.7	23.1
	1966(a)	10.0	72.4	17.6
Technology	1953	10.0	74.0	16.0
	1964	10.1	74.2	15.7
	1966	8.5	82.8	8.7
Medical sciences	1953	14.3	63.1	22.6
	1964	14.5	65.6	19.9
	1966	14.3	69.2	16.5
Agriculture	1953	7.4	41.9	50.7
	1964	7.5	52.8	39.7
	1966	9.2	70.8	20.0
Humanities	1953	17.5	61.5	21.0
	1964	14.8	66.3	18.9
	1966(b)	13.1	65.4	21.5
Social sciences	1959	17.6	65.3	17.1
	1964	14.5	63.4	22.1
	1966	11.8	67.5	20.7
Total	1950	14.5	56.0	29.5
	1964	12.7	66.1	21.2
	1966	11.2	71.9	16.9

Notes: (a) The classification was changed as from 1965, so these figures cover the physical sciences. The figures for the biological sciences are as follows: SL: 11.3 per cent; ML: 69.4 per cent; JL: 19.3 per cent.

(b) Education has not been included in the humanities since 1965; the breakdown for education in 1966 was as follows: SL: 8.1 per cent; ML: 87.5 per cent; JL: 4.4 per cent.

The overall growth rate in numbers of middle level staff has been much faster than that for other teachers (except in social sciences between 1959 and 1964) and they therefore account for a larger proportion of the teaching body. It will later be seen that the same pattern occurs in Northern Ireland.

B. Non-university higher education

We will not discuss here colleges of further education. According to the Robbins Report in 1961-62 students receiving higher education (at advanced level) represented, when estimated on a full-time basis, one quarter of students following courses leading to a recognised diploma, and of course an even smaller proportion of the total number of students at colleges of further education. Moreover, until then it had been impossible to estimate theoretically the number of hours actually devoted to teaching advanced students, as the teaching body of these colleges were dealing with pupils of different levels (1).

Table D summarises the recorded trends in teacher training colleges. In 1967-68 the number of full-time teachers had increased nearly fourfold since 1954-55. Their average annual rate of increase (11.1 per cent) was greater than the student rate over the same period (10.9 per cent). The student/teacher ratio can therefore be seen to have improved. But the separate inquiries for England and Wales and for Scotland show a great difference in the trends in numbers and student/teacher ratios. The student/teacher ratio is still greater in Scotland than in England and Wales, though this ratio was clearly improving towards the end of the 'fifties. In England and Wales the ratio has never exceeded the extremes of 1/10.2 and 1/11.9. In these countries a marked decline has been noted in the relative value of women teachers. The number of part-time teachers is small - 15 per cent of all teaching staff in Scotland in 1961-62 and 14 and 12 per cent in England and Wales (in 1961-62 and 1962-63) (2).

II. Composition of the teaching body in university-type higher education institutions

Answers to the "complementary questions" indicated teacher shortages in certain fields of study - usually where current demand is so high that annual outflows of graduates are inadequate - although no general shortage seems to exist. There are no precise data on the quantitative difference between the number of posts offered and those filled.

A. Proportional distribution of staff at different levels

The foregoing paragraphs and supporting tables have shown that the proportion of junior level teachers, far from increasing, has decreased in relation to university teaching staffs as a whole. This trend emerges clearly from the relevant data for the United Kingdom (including Northern Ireland, as will be seen later), and runs counter to what has happened in almost all the other countries currently under review. Nevertheless, concern is expressed in the Robbins Report about possibilities of promotion for university staff. Before World War II, 20 per cent of university teachers outside Oxford and Cambridge were professors, whereas the figure was only 12 per cent when the report was drawn up (page 178). A further recommendation made in the report was that more widespread use should be made of part-time staff since there were a considerable number of persons available who could make a valuable contribution. Excluding staff teaching medical subjects, only about 3 per cent of the university teaching body were in fact working part-time in 1963.

(1) Data on colleges of further education appear in Study on Teachers: Germany, Belgique, United Kingdom, OECD, Paris, 1969. Also, Part III "Teachers in Further Education", annex III, Robbins Report.

(2) Robbins Report, Appendix III, Part II.

1. Women teachers and the importance of part-time teachers

The numerical data in Table D relate to these two categories of teachers in non-university higher education. There has been no comparable breakdown for university education. However, the answers to the complementary questions showed that about 10.6 per cent of this part of the teaching body were women in 1965-66 and 1966-67. Since the available statistics differentiate between men and women teachers only from 1965 onwards it has not been possible to distinguish any trend.

As regards the new universities, the report by Professor Perkin (1) points out that the demand for additional staff has not been met by employing a particularly large proportion of women teachers. In fact, women hold four professorships and 146 middle and junior level posts in the ten new universities, i.e. they account for 2 per cent of the senior level staff and 10 per cent of the staff as a whole. According to the study in question it seems that the comparatively small number of women staff in the United Kingdom cannot be explained by any decision on principle or even discrimination in practice by the authorities handling recruitment, but is primarily due to the fact that there are few women applicants and most of them are without a really adequate university education.

2. Additional teaching hours and teaching schedules

The answers to the "complementary questions" stressed the difficulty in estimating the part played by additional teaching hours. In fact, the university system in the United Kingdom allows staff a great deal of flexibility between teaching, research and other academic activity in their special field. It is therefore impossible to say whether teaching schedules are too heavy in the absolute. They would be regarded as too heavy if they encroached on other activities unduly, but that would be a matter for judgment, not statistical appraisal.

Mention must also be made of the tutorial system operating in many English-speaking countries. In such a system the official teaching schedule is only partly indicative of the teacher's employment of his time.

Table E gives some indication of how university staffs in the various departments allocate their time between teaching and other academic activities.

Another way of evaluating the teacher supply and demand situation is to take the average number of actual teaching hours done each week by members of the teaching body at each level. A table in annex II summarises average teaching hours per week by field of study and level of staff. The table formed part of the Academic Staff Survey and was published by Oxford University in its "Report of Commission of Inquiry". It shows that teachers in higher education average 8.8 teaching hours per week. Most professors teach from 1 to 4 hours per week, readers between 5 and 8 hours and tutorial fellows between 5 and 12 hours. However, 11 per cent of the teaching body have a weekly teaching schedule of more than 17 hours.

3. Part played by foreign teachers

In the Perkin report it is pointed out that the new universities also use foreign staff to fill some of their posts, and such teachers account for a by no means insignificant proportion of the university teaching staff in the United Kingdom. The new universities have maintained this tradition. Thus, in 1968 Essex University had 19 foreign teachers out of a total of 147 and Lancaster 18 out of 203.

(1) Innovation in Higher Education - New Universities in the United Kingdom by H.J. Perkin - OECD, 1969, Paris.

Table D

TRENDS IN NUMBERS OF STUDENTS (a) AND FULL-TIME TEACHERS IN
TEACHER TRAINING COLLEGES

	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69
ENGLAND AND WALES															
Teachers (b)	total	2,317	2,404	2,491	2,591	2,912	3,276	3,583	4,321	4,941	5,764	6,703	7,888	9,114	
	women teachers	1,629	1,647	1,683	1,696	1,789	1,899	1,968	-	2,337	2,521	2,704	2,945	3,242	
	% of women teachers	70	69	68	65	61	58	55	-	47	44	40	37	35	
Students (c)	student/teacher ratio	24.500	24.800	27.000	29.000	30.800	32.200	35.100	36.500	48.400	54.793	62.752	73.775	85.474	96.993
SCOTLAND															
Teachers	total	259	-	-	-	266	278	314	343	383	-	-	623	778	868
	women teachers	-	-	-	-	143	146	160	50	-	-	-	276	324	356
	% of women teachers	-	-	-	-	54	53	51	-	-	-	-	44	42	41
Students	student/teacher ratio	3,1576	-	-	-	4,505	4,964	5,369	5,651	6,296	-	-	8,858	9,658	10,840
GREAT BRITAIN															
Teachers	total	2,539	-	-	-	2,857	3,190	3,906	4,704	-	-	-	7,326	8,666	9,982
	Index	100	-	-	-	113	126	141	154	185	-	-	288	341	393
Students	total	28,076	-	-	-	35,305	38,164	40,469	42,151	54,696	-	-	82,633	95,132	107,833
	Index	-	-	-	-	126	136	144	150	195	-	-	294	339	384
	student/teacher ratio	11.1	-	-	-	12.4	12.0	11.3	10.8	11.6	-	-	11.3	11.0	10.8

Sources : England and Wales : Teachers : 1954/55 : Education in 1955-56 to 1955/56 : Report of the Minister of Education; 1955/56 to 1962/63; Robbins Report, appendix III, part II; also Statistics of Education (Ministry of Education and Science). Students : 1954/55 : Development of Higher Education 1950-1967 - Statistical Survey (United Kingdom), OECD, Paris, 1970 ; also Robbins Report till 1962/63 (op. cit.) and Statistics of Education (op. cit.).
Scotland : 1954/55 to 1962/63 : Robbins Report (op. cit.); 1965/66 : Education in Scotland in 1965 - Scottish Ministry of Education ; 1956/67 to 1968/69 : Scottish Education Statistics for the number of Scottish students and teachers and Education in Scotland in 1960's for the number of foreign students.

- Notes : (a) including, except in 1954/55, for England and Wales foreign and Commonwealth students intending to teach outside the United Kingdom.
(b) on 31st March of the school year until 1962/63, then in October after this.
(c) excluding students in university departments of Education, Art Colleges and "other establishments".

Table E
Teaching loads by department estimated on the basis of time allocated

(in percentages)

Field of study	Undergraduate teaching	1966 - 1967		Other activities
		Post-graduate teaching	Research	
Humanities	50.9	10.5	27.5	11.1
Social sciences	44.7	15.9	27.1	12.3
Education	9.7	55.3	21.7	13.3
Physical sciences	36.2	20.8	35.2	7.8
Biological sciences	38.8	17.5	35.3	8.4
Technology	43.9	19.7	28.1	8.3
Other applied sciences	45.5	15.8	29.4	9.3
Medicine (a)	39.7	13.9	38.7	7.7
Clinical medicine	21.2	19.6	39.8	19.4
Clinical odontology	51.7	9.1	26.0	13.2
Veterinary	48.8	7.4	36.0	7.8
Clinical veterinary sciences	49.0	12.5	32.1	6.4
Agriculture (b)	34.3	18.4	37.5	9.8

Source: Answer to "complementary questions".

Notes: (a) Pre-clinical medicine, including odontology.
(b) Including forestry.

4. Other teachers

The answers to the "complementary questions" also provided certain information on teachers not covered by the numerical data in table I in annex. The teachers in question are those employed on a full-time basis and whose salaries are either paid partly by the universities or wholly by other institutions.

The data on these teachers has been available only since 1965-66 and is summarised below:

Teachers:	1965-66	1966-67
(1) partly financed by the universities	353	434
(2) financed wholly by other institutions	3,076	3,428

B. Supplementary data on trends in numbers and composition of the teaching body in universities, with particular reference to the new universities

It seems clear that the UGC (1) hoped to see the teaching body revitalised as the new universities (Keele, Sussex, York, East Anglia, Essex, Lancaster, Kent, Warwick, Stirling and Ulster) were set up and opened to students between 1960 and 1968 (2). One of the aims

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- (1) University Grants Committee.
 - (2) Innovation in Higher Education - New Universities in the United Kingdom by H.J. Perkin, OECD, 1969.

was to achieve greater mobility between the universities. There were strong pressures for promotion within the universities themselves, however, as retiring senior level teachers were replaced by middle and junior level staff. It is therefore primarily at the senior level (Chairs) that some mobility has in fact been achieved.

In 1966-67 the full-time teaching staff at the universities of East Anglia, Essex, Keele, Kent, Lancaster, Sussex, Warwick and York comprised:

Professors (SL)	172
Readers, senior lecturers and lecturers (ML)	869
Assistant lecturers and others (JL)	404
Total	1,445
	=====

The Perkin report estimates that by 1972 all the new universities will employ 10 per cent of the entire university teaching body, or perhaps even less. The additional demand for qualified professors which has been created by the new universities has been (and will be) quite easily satisfied owing to the artificial restriction on promotions. This demand was estimated at 204 for 1965-66, whereas the estimated total of other university professors in the same year was 2,404. Although it is difficult to determine the extent to which the qualifications of the new professors match those of their colleagues in older universities, it would appear that their academic training and degrees are comparable in value.

The enquiry on which the Perkin report was based established that the new universities had no great difficulty in attracting very competent staff from the older universities. The possibility of trying out new ideas or methods, studying new subjects or revitalising methods of approaching traditional subjects were apparently powerful elements of attraction. These opportunities to be inventive in a liberal climate, to work as a real pioneer and to carry out all sorts of experiments seem to have largely offset the apprehension of teachers concerning the scheduled increase in course loads and administrative work. Full-time student/full-time staff ratio was 7.4 in 1966-67 in the new universities.

III. Conclusions

As shown in table I in annex and table A in the text, the overall numerical growth rate for teachers was slightly higher than that of students between 1953 and 1964.

Rather than an overall imbalance in the quantitative situation in higher education, the responsible authorities fear the appearance or development of specific local imbalances.

The very substantial growth in numbers of middle level staff should also be noted.

In teacher training colleges a fast rate of growth of the teaching staff has been recorded in spite of a very strong demand caused by their expansion since 1960.

Table I bis (Indexes)

Teaching staff (full-time) by status and field of specialisation in university institutions

Field of specialisation	Year	Pure science	Tech-nology	Medical sciences	Agri-culture	Humani-ties	Social sciences	SL	Total			Law	
									ML	JL	T	Cam-bridge	Ox-ford
1950/51								100	100	100	100		
1951/52								103	106	100	104		
1952/53		100	100	100	100	100		104	116	87	106		
1953/54		105	99	101	104	105		107	123	88	111	100	100
1954/55		110	108	103	107	108		114	135	89	119	109	104
1955/56		116	115	106	107	108		117	141	88	122	113	101
1956/57		121	125	107	109	111		118	147	90	126	116	101
1957/58		125	132	108	111	113	94(a)	100	125	152	94	130	120
1958/59		137	149	113	108	113		115	121	162	96	137	120
1959/60		144	155	120	116	94		123	130	169	104	144	130
1960/61		155	167	122	119	97		138	137	178	111	152	126
1961/62		175	171	130	121	103		156	144	192	122	164	127
1962/63		191	185	138	121	112		179	154	205	136	177	127
1963/64		217	196	148	128	127		223	174	235	143	199	110
1964/65		205 (b)	220	161	104	125		370	193	324	151	254	
1965/66		219	236	166	107	134		429	212	352	157	274	
1966/67													

Source: See table I.

Notes: (a) See note (b), table I.
(b) From 1965/66, the basis on which the returns are compiled has been changed.

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Table II

STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS (FULL-TIME)

Field of special. Year	PURE SCIENCE	TECHNO- LOGY	MEDICAL SCIENCES	ABSOLUTE FIGURES		EDUCA- TION	SOCIAL SCIENCES	TOTAL	Field of special. Year	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030	2030/2031	2031/2032	2032/2033	2033/2034	2034/2035	2035/2036	2036/2037	2037/2038	2038/2039	2039/2040	2040/2041	2041/2042	2042/2043	2043/2044	2044/2045	2045/2046	2046/2047	2047/2048	2048/2049	2049/2050	2050/2051	2051/2052	2052/2053	2053/2054	2054/2055	2055/2056	2056/2057	2057/2058	2058/2059	2059/2060	2060/2061	2061/2062	2062/2063	2063/2064	2064/2065	2065/2066	2066/2067	2067/2068	2068/2069	2069/2070	2070/2071	2071/2072	2072/2073	2073/2074	2074/2075	2075/2076	2076/2077	2077/2078	2078/2079	2079/2080	2080/2081	2081/2082	2082/2083	2083/2084	2084/2085	2085/2086	2086/2087	2087/2088	2088/2089	2089/2090	2090/2091	2091/2092	2092/2093	2093/2094	2094/2095	2095/2096	2096/2097	2097/2098	2098/2099	2099/20100	20100/20101	20101/20102	20102/20103	20103/20104	20104/20105	20105/20106	20106/20107	20107/20108	20108/20109	20109/20110	20110/20111	20111/20112	20112/20113	20113/20114	20114/20115	20115/20116	20116/20117	20117/20118	20118/20119	20119/20120	20120/20121	20121/20122	20122/20123	20123/20124	20124/20125	20125/20126	20126/20127	20127/20128	20128/20129	20129/20130	20130/20131	20131/20132	20132/20133	20133/20134	20134/20135	20135/20136	20136/20137	20137/20138	20138/20139	20139/20140	20140/20141	20141/20142	20142/20143	20143/20144	20144/20145	20145/20146	20146/20147	20147/20148	20148/20149	20149/20150	20150/20151	20151/20152	20152/20153	20153/20154	20154/20155	20155/20156	20156/20157	20157/20158	20158/20159	20159/20160	20160/20161	20161/20162	20162/20163	20163/20164	20164/20165	20165/20166	20166/20167	20167/20168	20168/20169	20169/20170	20170/20171	20171/20172	20172/20173	20173/20174	20174/20175	20175/20176	20176/20177	20177/20178	20178/20179	20179/20180	20180/20181	20181/20182	20182/20183	20183/20184	20184/20185	20185/20186	20186/20187	20187/20188	20188/20189	20189/20190	20190/20191	20191/20192	20192/20193	20193/20194	20194/20195	20195/20196	20196/20197	20197/20198	20198/20199	20199/20200	20200/20201	20201/20202	20202/20203	20203/20204	20204/20205	20205/20206	20206/20207	20207/20208	20208/20209	20209/20210	20210/20211	20211/20212	20212/20213	20213/20214	20214/20215	20215/20216	20216/20217	20217/20218	20218/20219	20219/20220	20220/20221	20221/20222	20222/20223	20223/20224	20224/20225	20225/20226	20226/20227	20227/20228	20228/20229	20229/20230	20230/20231	20231/20232	20232/20233	20233/20234	20234/20235	20235/20236	20236/20237	20237/20238	20238/20239	20239/20240	20240/20241	20241/20242	20242/20243	20243/20244	20244/20245	20245/20246	20246/20247	20247/20248	20248/20249	20249/20250	20250/20251	20251/20252	20252/20253	20253/20254	20254/20255	20255/20256	20256/20257	20257/20258	20258/20259	20259/20260	20260/20261	20261/20262	20262/20263	20263/20264	20264/20265	20265/20266	20266/20267	20267/20268	20268/20269	20269/20270	20270/20271	20271/20272	20272/20273	20273/20274	20274/20275	20275/20276	20276/20277	20277/20278	20278/20279	20279/20280	20280/20281	20281/20282	20282/20283	20283/20284	20284/20285	20285/20286	20286/20287	20287/20288	20288/20289	20289/20290	20290/20291	20291/20292	20292/20293	20293/20294	20294/20295	20295/20296	20296/20297	20297/20298	20298/20299	20299/20200	20200/20201	20201/20202	20202/20203	20203/20204	20204/20205	20205/20206	20206/20207	20207/20208	20208/20209	20209/202010	202010/202011	202011/202012	202012/202013	202013/202014	202014/202015	202015/202016	202016/202017	202017/202018	202018/202019	202019/202020	202020/202021	202021/202022	202022/202023	202023/202024	202024/202025	202025/202026	202026/202027	202027/202028	202028/202029	202029/202030	202030/202031	202031/202032	202032/202033	202033/202034	202034/202035	202035/202036	202036/202037	202037/202038	202038/202039	202039/202040	202040/202041	202041/202042	202042/202043	202043/202044	202044/202045	202045/202046	202046/202047	202047/202048	202048/202049	202049/202050	202050/202051	202051/202052	202052/202053	202053/202054	202054/202055	202055/202056	202056/202057	202057/202058	202058/202059	202059/202060	202060/202061	202061/202062	202062/202063	202063/202064	202064/202065	202065/202066	202066/202067	202067/202068	202068/202069	202069/202070	202070/202071	202071/202072	202072/202073	202073/202074	202074/202075	202075/202076	202076/202077	202077/202078	202078/202079	202079/202080	202080/202081	202081/202082	202082/202083	202083/202084	202084/202085	202085/202086	202086/202087	202087/202088	202088/202089	202089/202090	202090/202091	202091/202092	202092/202093	202093/202094	202094/202095	202095/202096	202096/202097	202097/202098	202098/202099	202099/2020100	2020100/2020101	2020101/2020102	2020102/2020103	2020103/2020104	2020104/2020105	2020105/2020106	2020106/2020107	2020107/2020108	2020108/2020109	2020109/2020110	2020110/2020111	2020111/2020112	2020112/2020113	2020113/2020114	2020114/2020115	2020115/2020116	2020116/2020117	2020117/2020118	2020118/2020119	2020119/2020120	2020120/2020121	2020121/2020122	2020122/2020123	2020123/2020124	2020124/2020125	2020125/2020126	2020126/2020127	2020127/2020128	2020128/2020129	2020129/2020130	2020130/2020131	2020131/2020132	2020132/2020133	2020133/2020134	2020134/2020135	2020135/2020136	2020136/2020137	2020137/2020138	2020138/2020139	2020139/2020140	2020140/2020141	2020141/2020142	2020142/2020143	2020143/2020144	2020144/2020145	2020145/2020146	2020146/2020147	2020147/2020148	2020148/2020149	2020149/2020150	2020150/2020151	2020151/2020152	2020152/2020153	2020153/2020154	2020154/2020155	2020155/2020156	2020156/2020157	2020157/2020158	2020158/2020159	2020159/2020160	2020160/2020161	2020161/2020162	2020162/2020163	2020163/2020164	2020164/2020165	2020165/2020166	2020166/2020167	2020167/2020168	2020168/2020169	2020169/2020170	2020170/2020171	2020171/2020172	2020172/2020173	2020173/2020174	2020174/2020175	2020175/2020176	2020176/2020177	2020177/2020178	2020178/2020179	2020179/2020180	2020180/2020181	2020181/2020182	2020182/2020183	2020183/2020184	2020184/2020185	2020185/2020186	2020186/2020187	2020187/2020188	2020188/2020189	2020189/2020190	2020190/2020191	2020191/2020192	2020192/2020193	2020193/2020194	2020194/2020195	2020195/2020196	2020196/2020197	2020197/2020198	2020198/2020199	2020199/2020200	2020200/2020201	2020201/2020202	2020202/2020203	2020203/2020204	2020204/2020205	2020205/2020206	2020206/2020207	2020207/2020208	2020208/2020209	2020209/2020210	2020210/2020211	2020211/2020212	2020212/2020213	2020213/2020214	2020214/2020215	2020215/2020216	2020216/2020217	2020217/2020218	2020218/2020219	2020219/2020220	2020220/2020221	2020221/2020222	2020222/2020223	2020223/2020224	20202

Table III
 Student enrolments in university institutions
 (part-time and full-time)

Years	Part-time	Full-time and part-time
1950/51	16,698	102,012
1951/52	17,058	100,516
1952/53	15,855	97,329
1953/54	15,755	96,357
1954/55	16,146	97,851
1955/56	16,300	101,494
1956/57	16,208	106,074
1957/58	16,486	111,928
1958/59	15,879	116,083
1959/60	15,932	119,941
1960/61	17,831	125,530
1961/62	18,779	131,922
1962/63	16,424	135,428
1963/64	16,528	142,973
1964/65	18,077	156,788
1965/66 (a)	12,445	181,052
1966/67	16,521	200,724

Source: Answers to "complementary questions".

Note: (a) From 1965/66, the basis on which the returns are compiled has been changed.

ANNEX II

TIME SPENT ON TEACHING (EXCLUDING POSTGRADUATE SUPERVISION) BY POST AND SUBJECT GROUP,
MICHAELMAS TERM 1964

SUBJECT GROUP	TOTAL TEACHING (HOURS PER WEEK)	PRO-FESSOR	"READER"	"LECTURER" WITH "TUTORIAL FELLOWSHIP"	"UNIVERSITY LECTURER" WITHOUT "TUTORIAL FELLOWSHIP"	"SPECIAL LECTURERS" ETC.	UNIVERSITY STAFF WITH TUTORIAL FELLOWSHIP	OTHER SENIOR RESEARCH STAFF	OTHER UNIVERSITY AND OUTSIDE GRANTS STAFF	COLLEGE POST ONLY: TEACHING	COLLEGE POST ONLY: RESEARCH	ALL POST
Arts (a)	0 1-4 5-8 9-12 13-16 17-20 21 and over All	0 62 20 13 19 2 6 100	- 25 50 19 33 52 14 100	- - 30 27 15 9 100	- 18 8 25 41 20 5 100	- 1 - 13 15 50 38 100	- - - - - - - 100	- 19 12 31 27 4 8 100	- 16 13 25 28 13 6 100	- 27 27 11 28 - - 100	4 14 16 22 27 14 3 100	
Social Sciences	0 1-4 5-8 9-12 13-16 17-20 21 and over All	0 78 22 - 36 9 - 100	- 9 45 - - - - 100	- - - - - - - 100	- 22 22 39 11 6 - 100	- 2 - 13 31 24 28 2 100	- 25 25 50 25 - - - 100	- 20 20 50 10 - - 100	- 21 21 16 32 11 - 100	- 21 42 - 32 11 - 100	9 18 26 - - - - 100	
Science	0 1-4 5-8 9-12 13-16 17-20 21 and over All	0 65 13 17 9 - - 100	- 14 34 17 21 28 56 17 3 5 100	- 15 6 - 26 13 14 6 100	- 4 - - 23 59 44 12 5 100	- 4 - - 16 35 44 12 5 100	- 36 24 18 22 6 6 3 100	- 39 24 18 22 6 6 3 100	- 7 5 13 29 7 7 - 100	- 17 48 30 55 13 29 - 100	16 19 21 16 4 - - 100	
Medical Sciences	0 1-4 5-8 9-12 13-16 17-20 21 and over All	0 60 64 30 18 9 - 100	- - - - - - - 100	- 19 45 13 10 10 3 - 100	- 19 45 13 10 10 3 - 100	- - - - - - - - 100	- 80 10 - 5 8 3 - 100	- 45 10 - 5 8 3 - 100	- - - - - - - - 100	- - - - - - - - 100	16 19 21 16 4 - - 100	
All Subjects	0 1-4 5-8 9-12 13-16 17-20 21 and over All	0 64 24 37 19 13 1 100	- 2 - - - - - 100	- 6 - 4 - 54 18 1 100	- 23 - 4 26 13 6 1 100	- 1 - 8 26 12 8 4 100	- 5 11 15 26 12 8 4 100	- 36 22 15 24 9 5 3 100	- 15 24 20 27 11 - - 100	12 18 19 18 7 21 9 2 100		

Source : Academic Staff Survey.
Answers to "complementary questions".

Note : (a) Include various branches like Humanities, Architecture, Fine Arts, etc.

Northern Ireland

The criteria governing the selection and promotion of members of the teaching body in Northern Ireland closely resemble those used in Great Britain.

I. Trends in numbers of teachers and students in university education

1. Student/teacher ratios and numbers

The numbers of teachers and students enrolled at Queen's University (Belfast) are shown in tables I and II in annex. The following student/teacher ratios were calculated on the basis of these two tables.

The quantitative situation deteriorated slightly between 1951 and 1964 if the overall full-time student/teacher ratio alone is taken into account. Great differences appear when the overall ratio is broken down by field of study. The ratio has in fact shown a most marked increase in pure science and education, and in the humanities, fine arts and law taken together. On the other hand, the largest decreases have been in technology, medical sciences and, to a lesser degree, social science.

Similarly, variations will be observed in many of the student/teacher ratios based on the levels of teaching staff. Thus, the full-time student/senior level staff ratio decreased in technology and medical sciences, whereas it increased in other fields of study. The full-time student/junior level staff ratio increased in pure science and agriculture and in the humanities, law and fine arts taken together. The picture emerging from table B below presents some very minor differences.

2. Numerical growth rates for university teachers and students

These rates are summarised in table C. It will be noted that the growth rates for middle level staff are particularly high, even when compared with the rates for junior level teachers other than in social studies. In this connection, Northern Ireland shows a quite marked divergence from the general trend towards a far greater relative increase in junior level teachers.

3. Structural changes

Table D confirms precisely the substantial increase in the proportion of middle level staff in the teaching body as a whole.

II. Composition of the teaching body

Table E below, based on data provided by UNESCO gives a breakdown of the teaching body by full and part-time staff and by sex.

Table A

Full-time student/teacher ratios by field of study and
level of teaching staff in university level education
(1951, 1964 and 1966) (a)

Field of study		S/SL	S/ML	S/JL	S/SL+ML	S/Total
Pure science	1951	41.8	17.6	11.5	12.4	6.0
	1964	71.5	11.2	27.3	9.7	7.1
	1966	121.5	18.1	43.1	15.7	11.5
Architecture	1951	-	-	-	-	-
	1964	-	-	-	-	-
	1966	149.0	18.6	-	16.6	16.6
Technology	1951	338.0	84.5	67.6	67.6	33.8
	1964	109.1	17.4	47.8	15.0	11.4
	1966	114.4	16.3	47.1	14.3	11.0
Medical sciences	1951	61.7	27.2	48.5	18.9	13.6
	1964	41.9	9.4	33.5	7.7	6.3
	1966	32.2	10.5	14.1	7.9	5.1
Agriculture	1951	12.2	5.5	2.8	3.8	1.6
	1964	19.6	4.1	5.8	3.4	2.1
	1966	15.6	2.9	6.0	2.4	1.7
Humanities + fine arts + law	1951	64.3	25.3	50.5	18.1	13.3
	1964	98.3	26.8	64.1	21.1	15.8
	1966	56.2	16.5	31.2	12.8	9.1
Education	1951	38.0	19.0	38.0	12.7	9.5
	1964	133.0	22.2	-	19.0	19.0
	1966	143.0	15.9	-	14.3	14.3
Social sciences	1951	47.0	15.7	94.0	11.8	10.4
	1964	76.0	17.5	25.3	14.3	9.1
	1966	125.1	21.7	75.1	18.5	14.8
Total	1951	56.3	22.1	26.2	15.9	9.9
	1964	69.3	14.2	36.1	11.8	8.9
	1966	74.4	15.2	35.1	12.6	9.3

Note: (a) It should be noted that only the ratios for 1951 and 1964 are comparable, owing to the discontinuity of the statistical data after 1965.

Table B

Full and part-time student/teacher ratios by field of study
and level of teaching staff in university level education
(1951, 1964 and 1966)

Field of study		S/SL	S/ML	S/JL	S/SL+ML	S/Total
Pure science	1951	44.8	18.8	12.3	13.3	6.4
	1964	76.7	12.0	29.3	10.4	7.7
	1966	131.5	19.6	46.7	17.0	12.5
Architecture	1951	-	-	-	-	-
	1964	-	-	-	-	-
	1966	163.0	20.4	-	18.1	18.1
Technology	1951	501.0	125.3	100.2	100.2	50.1
	1964	120.3	19.1	52.6	16.5	12.6
	1966	132.3	18.9	54.5	16.5	12.7
Medical sciences	1951	64.6	28.3	50.6	19.7	14.2
	1964	44.1	9.9	35.3	8.1	6.6
	1966	39.2	12.8	17.2	9.7	6.2
Agriculture	1951	13.0	5.9	3.0	4.1	1.7
	1964	23.8	5.0	7.0	4.1	2.5
	1966	20.0	3.7	7.7	3.1	2.2
Humanities + fine arts + law	1951	69.0	27.1	54.2	19.5	14.3
	1964	106.5	29.1	69.5	22.8	17.2
	1966	66.7	19.6	37.1	15.2	10.8
Education	1951	60.0	30.0	60.0	20.0	15.0
	1964	218.0	36.3	-	31.1	31.4
	1966	268.0	29.8	-	26.8	26.8
Social sciences	1951	94.5	31.5	189.0	23.6	21.0
	1964	143.0	33.0	47.7	26.8	17.2
	1966	153.9	26.6	92.3	22.7	18.2
Total	1951	66.0	25.9	30.7	18.6	11.6
	1964	79.2	16.3	41.2	13.5	10.2
	1966	88.2	18.1	41.6	15.0	11.0

Table C

Breakdown of numerical growth rates for teachers and students
by field of study and level of teaching staff in university
level education over the period 1951-1964

(in percentages)

Field of study	Teachers				Students	
	SL	ML	JL	Total	Full-time	Total
Pure science	3.8	12.0	1.3	6.7	8.2	8.2
Technology	16.2	20.0	9.4	15.8	6.5	4.1
Medical sciences	2.9	8.4	2.8	6.0	-0.1	-0.1
Agriculture	0.0	6.2	-2.0	1.5	3.7	4.8
Humanities + fine arts + law	2.4	5.3	3.9	4.4	5.8	5.9
Education	0.0	8.8	-	4.4	10.1	10.4
Social sciences	3.2	6.1	18.4	8.2	7.1	6.5
Average ratios	3.4	8.7	2.5	6.0	5.1	4.9

Table D

Structural changes in the teaching body in
university level education by field of study
(1951, 1964 and 1966)

Field of study	Level	SL	ML	JL
Pure science	1951	14.3	33.9	51.8
	1964	10.0	63.8	26.2
	1966	9.5	63.8	26.7
Technology	1951	10.0	40.0	50.0
	1964	10.4	65.7	23.9
	1966	9.6	67.1	23.3
Medical sciences	1951	22.0	50.0	28.0
	1964	14.9	66.4	18.7
	1966	15.8	48.2	36.0
Agriculture	1951	13.2	28.9	57.9
	1964	10.9	52.2	36.9
	1966	11.1	60.0	28.9
Humanities + fine arts + law	1951	20.8	52.8	26.4
	1964	16.1	59.2	24.7
	1966	16.1	54.9	29.0
Education	1951	25.0	50.0	25.0
	1964	14.3	85.7	-
	1966	10.0	90.0	-
Social sciences	1951	22.2	66.7	11.1
	1964	12.0	52.0	36.0
	1966	11.9	68.4	19.7
Total	1951	17.6	44.7	37.7
	1964	12.8	62.5	24.7
	1966	12.5	61.0	26.5

Table E

Year	No. of institutions	Total teaching staff	Part-time teaching staff		Women teachers		Students
			%	%	%	%	
1961	2	503	94	19	56	11	4,296
1960	2	500	82	16	50	10	3,988
1959	2	441	73	17	45	10	3,621
1958	2	403	71	18	32	8	3,411
1957	2	379	46	12	22	6	3,040

Source: World Survey of Education, Vol.IV, p.1202.

The above table shows a rising trend in the proportion of women teachers between 1957 and 1961. However, no breakdown by teaching level is available.

Similarly, although no trends relating to teaching levels can be determined from the data available, the proportion of part-time teachers has risen from 12 to almost 19 per cent.

In non-university type education, teacher training colleges (except for domestic economy and fine arts) had a total staff of 143, of whom 66 (46 per cent) were women teachers and 12 (8 per cent) were part-time teachers. These taught 1,700 students. (Student/full-time teacher ratio : 13) (1).

III. Conclusions

The quantitative trends in university teaching staff and students in Northern Ireland over the period 1951-1964 are quite well balanced, although this harmonious growth actually conceals disparities in the quantitative trends in particular fields of study. In short, the student/teacher ratio decreased in technology, medical sciences and social sciences, whereas it increased in all other fields of study (excluding architecture).

It is also worthy of note that the numbers of middle level teachers generally increased most rapidly, which is a rather exceptional development.

(1) Source: See table E.

Table I bis (Indexes)

Queen's University - teaching staff by status and field of specialisation

Field of specialisation Year	Total											
	Pure science	Techno- logy	Medicinal sciences	Agricul- ture	Humanit- aries, fine arts,	Educa- tion	Social sciences	Other	SL	ML	JL	T
1951/52	100	100	100	100	100	100	100	100	100	100	100	100
1952/53	111	100	120	100	104	104	100	111	100	98	115	92
1953/54	120	100	136	97	104	100	133	88	98	124	103	103
1954/55	134	120	146	100	113	100	167	88	103	143	107	111
1955/56	152	180	164	97	121	100	156	88	115	142	117	122
1956/57	145	200	152	100	123	100	144	100	115	145	106	128
1957/58	139	210	176	100	125	100	156	100	120	162	99	125
1958/59	154	250	168	100	125	100	144	100	125	164	53	131
1959/60	145	350	170	108	143	100	189	100	128	185	84	115
1960/61	161	420	212	97	157	100	267	100	125	196	92	144
1961/62	182	480	208	111	130	100	267	100	133	222	103	161
1962/63	191	480	210	111	155	100	256	100	138	212	129	168
1963/64	200	480	206	116	158	150	267	100	138	274	120	192
1964/65	232	670	214	121	175	175	278	88	155	296	138	212
1965/66	189	650	226	121	147(a)	225	656	75	160	276	162	213
1966/67	207	730	228	119	175(a)	250	844	100	170	325	167	239

Source: See table I.

Note: (a) See table I.

Table II
QUEEN'S UNIVERSITY - ENROLMENTS OF FULL-TIME STUDENTS (UNDERGRADUATES AND POSTGRADUATES)

Field of special. Year	ABSOLUTE FIGURES										Field of special. Year	INDEXES	TOTAL
	MEDICAL SCIENCES	PURE SCIENCE	TECHNOLOGY	CRAFTS	HUMANITIES	EDUCATION	PURE SCIENCES	LAW	PURE SCIENCES	SOCIAL SCIENCES			
1951/52	334	338	672	679	61	634	38	73	94	2,251	1951/52	100	100
1952/53	344	334	678	668	51	607	32	79	96	2,211	1952/53	101	98
1953/54	348	312	660	640	50	650	38	71	93	2,182	1953/54	103	94
1954/55	344	313	657	595	50	604	44	74	95	2,119	1954/55	104	93
1955/56	383	335	718	558	45	619	46	82	103	2,071	1955/56	115	99
1956/57	404	370	774	543	45	648	35	79	121	2,245	1956/57	121	109
1957/58	455	408	863	556	53	682	35	79	141	2,049	1957/58	136	121
1958/59	584	458	1,042	538	61	769	31	87	163	2,691	1958/59	175	135
1959/60	647	544	1,191	592	67	844	36	91	180	3,001	1959/60	194	161
1960/61	743	601	1,344	616	79	941	56	102	181	3,219	1960/61	222	178
1961/62	846	647	1,493	627	85	1,159	63	124	190	3,741	1961/62	253	191
1962/63	886	700	1,565	639	86	1,130	66	125	189	3,821	1962/63	265	207
1963/64	982	734	1,716	649	95	1,213	114	134	196	4,117	1963/64	294	217
1964/65	929	764	1,635	670	98	1,256	133	178	228	4,296	1964/65	278	266
1965/66	1,303	102	747	2,152	590	77	621	122	51	186	930	4,729	1965/66
(a)	1,357	149	801	2,287	579	78	568	143	43	232	1,126	5,056	1966/67
(a)											400	237	76

Source : Ministry of Education - Donaldson House, Belfast.

Note : (a) The detailed figures for these years are based on new subject groupings introduced by the University Grants Committee; prior to 1955/56, the figures are based on faculty distribution. (See annex II.)

Table III

**QUEEN'S UNIVERSITY - PART-TIME STUDENTS ARRANGED UNDER FACULTIES
(UNDERGRADUATES AND POSTGRADUATES)**

Source : Ministry Of Environment - Department Of Environment

Source : Faculty of Education - Donaldson House, Belfast.
Note : (a) The detailed figures for these years are based on new subject groupings introduced by the University Grants Committee; prior to 1965/66 the figures are based on faculty distribution. (See annex II).

Table IV
 Queen's University - student enrolments (full-time and part-time)

	1951	1964	1966
Pure science	358	997	1,447
Architecture	-	-	163
Technology	501	842	926
Medical sciences	708	705	705
Agriculture	65	119	100
Humanities	674	1,410	694
Education	60	218	268
Fine arts	-	-	54
Law	85	188	253
Social sciences	189	429	1,385
Total	2,640	4,908	5,995

Source: Ministry of Education, Dundonald House, Belfast.

ANNEX II

Northern Ireland (1)

Changes in the statistical presentation

The variations in tables made up to the year 1964-65 and in those made after that year can be explained as follows:

Up to and including 1964-65

Data used up to this date are furnished in accordance with the definition of faculties inside universities, conforming to the demands of the University Grants Committee.

After 1965-66

After the university year 1965-66, the UGC changed the former definitions and adopted a definition by "group of subjects". The data have been presented in this form so that interesting comparisons can be made between Queen's University, Belfast, and the other universities of the United Kingdom who adopted this type of definition (by groups of subjects) after 1965-66.

The main differences between these data are as follows:

a) Pure science

Since 1965-66 students of the faculties of technology, medicine and agriculture studying scientific subjects have been included with the number of pure science students.

b) Architecture

This subject has been taught only since 1965-66.

c) Technology

Since 1965-66 students of technology following purely scientific courses are included in the number of pure science students.

d) Medical sciences

Since 1965-66 students of medicine studying purely scientific subjects are counted as students of pure science.

e) Agriculture

Since 1965-66 students of agriculture studying purely scientific subjects are counted as students of pure science.

f) The humanities

Before 1964-65 this group of subjects was included in the faculty of the humanities. Students of the former faculty of the humanities have now been dispersed among the humanities, the fine arts and the social sciences (see below).

g) Education

Same definition.

(1) Answers to the "complementary questions": Queen's University of Belfast.

h) Fine arts

Formerly these subjects were included in the humanities.

i) Law

Same definition.

j) Social sciences

Before 1964-65 these subjects were taught in the faculty of economics. Since then students of the faculty of the humanities, who have chosen to study certain subjects in the social sciences, have been included in the number of students of social sciences.

SWEDEN

Higher education in Sweden is provided by five universities and various university level institutions providing education for specific professions. There are also three universities of technology.

Non-university higher education is provided by the various institutes specialising in fine arts, journalism, social studies, etc., and the "lärarhögskolor", or teacher training colleges, to which only university graduates are admitted.

It must be borne in mind, in considering the figures quoted in this study, that teachers in higher education are appointed mainly on the strength of their research qualifications, and that they teach for only a few hours a week (1).

I. Criteria for recruiting and promoting teachers

There are relatively few professors holding chairs. They are usually appointed on the strength of distinguished published works, or because they held the position of director or head of department in certain research institutes. The assistant professors, "laborators", "preceptors", "prosektors" or "observators" are generally highly qualified teachers. All these members of the teaching staff are required to lecture for four hours per week. Until 1958, only professors and associate professors were permanent members of the university.

The lecturers ("lektorer"), who are usually doctors, direct class studies; their teaching load is much heavier than that of their senior colleagues (about 12 hours per week). Lecturers employed on a temporary basis are usually teachers who have demonstrated a sufficient degree of specialisation, but have not obtained their doctorate.

Persons who hold a doctor's degree with honours may be appointed to the short-term post of "docent", and as such they lecture to the highest class of students, or pursue research work in the university.

"With a few rare exceptions, full professors and associate professors are chosen from among the temporary "docents", and the same is true for the majority of established lecturers (2)."

Going down the scale, we come to the assistant professors, more and more frequently replaced by research assistants who may exceptionally be required to teach. They must be licentiates of a university or equivalent institute. The "amanuenses" are students working for a licentiate; like the assistants they help the professors with some of their tasks.

"Assistants and junior assistants fulfil many important functions. They help and serve as advisers to junior students, assist with the teaching, and sometimes lecture themselves. They take part in research work and assist in the administrative tasks of the institutes to which they are attached. Their working hours are so arranged as to give them plenty of time for their own research and study; assistants are expected to devote 1,000 hours a year to work for the institute." (3)

(1) World Survey of Education, Volume IV, UNESCO.

(2) For further information, reference should be made to Educational Policy and Planning - Sweden, OECD, 1967, pp.194 et seq.

(3) Educational Policy and Planning - Sweden, OECD, 1967, p.196.

Members of various professions may give up part of their time to the university; many examples are to be found in the Faculty of Medicine.

II. Trends in numbers of teachers and students in higher education

1. Student/teacher ratios and numbers

UNESCO has issued some summary data for the period 1957-61, which are reproduced below.

Table A

Trend in numbers of teachers and students between 1957 and 1961

	Year I	Institution (a) II	Teaching staff III	Students IV	Student/ teacher ratio IV/III
Universities and institutes	1961-62	39	1,934	40,184	20.8
awarding equiva- lent degrees	1960-61	36	1,838	36,909	20.1
	1959-60	35	1,712	32,902	19.2
	1958-59	28	1,576	30,113	19.1
	1957-58	27	1,427	27,216	19.1

Source: World Survey of Education, UNESCO, Volume IV.

Note: (a) The establishments included for 1961-62 are the following:

18 faculties, 3 institutes of technology, 1 institute of pharmacy, 1 central institute of gymnastics, 2 institutes of physio-therapy, 2 teacher training institutes, 3 social service institutes, 1 dairy industry section at the Alnarp Institute, 2 colleges of economics, 3 colleges of dentistry, 1 college of veterinary science, 1 college of agriculture, 1 college of forestry.

Some further information on the number of students per teacher has been supplied by OECD (1).

(1) See Educational Policy and Planning - Sweden, op.cit., page 198:

Student/teacher ratios in selected faculties

Faculties	1956	1960	1963	1965
Theology	13	23	25)	
Law	34	31	29)	25
Humanities and social sciences	26	23	26)	
Economics	31	23	22)	
Natural sciences	8	8	8	9
Medicine)				
Dentistry)	7	7	7	5
Pharmacy)				
Technology	13	8	8	6
Average ratios	14	12	13	12

"Student/teacher ratios, i.e. the number of registered students per teacher (all categories, including assistants) are shown in the table for 1956, 1960 and 1963. Estimates are also given for 1965, but the figures for that year are not fully comparable to the others, as a somewhat broader definition of "teacher" has been used for 1965. Thus, certain research and medical assistants are included in the latter year."

Furthermore, the faculties of theology, law, economics and humanities have been added together."

For the years 1965-1968, a general estimate and a breakdown by field of study were made with the help of the "Högre utbildning och forskning i Sverige". This source indicates a total number of teachers in universities or equivalent institutions, and in some other post-secondary institutes, of 5,326 in 1965, and 7,224 in 1968. Table I in annex shows the breakdown by level of the teaching staff. The number of senior level teachers appears particularly high in both years.

Student/teacher ratios have been calculated from tables I and II in annex, and are shown below in table B.

Table B

Student/teacher ratios by field of study and
by level of teachers in higher education
(1965 and 1968)

Field of study	S/SL	S/ML	S/JL	S/SL+ML	S/Total
Pure science	23.0	102.8	14.3	18.8	8.1
	33.2	119.7	23.6	26.0	12.4
Technology	24.8	523.6	12.6	23.7	8.2
	26.9	356.4	13.3	25.0	8.7
Medical sciences	14.1	31.2	16.9	9.7	6.2
	15.2	27.0	17.4	9.7	6.2
Agriculture	5.9	6.9	10.0	3.2	2.4
	6.9	7.6	11.7	3.6	2.8
Humanities	44.1	117.2	122.7	32.0	25.4
	56.5	167.7	186.5	42.2	34.4
Education	74.5	29.8	149.0	21.3	18.6
	64.3	12.9	90.0	10.7	9.6
Law	45.1	767.3	219.2	42.6	35.7
	97.4	1,728.0	300.5	93.4	70.5
Social sciences	62.1	207.1	91.6	47.8	31.4
	67.8	201.5	150.8	50.7	38.0
Total	31.0	94.0	30.8	23.3	13.3
	37.8	78.4	44.7	25.5	16.2

2. Average annual growth rates by field of study between 1965 and 1968

The number of teachers, classified by level, and the number of students increased as follows between 1965 and 1968.

Table C

Average annual rates of increase in the numbers
of teachers and students in higher education
(1965-1968)

(in percentages)

Field of study	Teachers				Students
	SL	ML	JL	Total	
Pure science	4.8	12.5	0.2	2.9	18.4
Technology	6.7	25.0	7.8	7.8	9.6
Medical sciences	5.1	13.0	6.7	7.4	7.8
Agriculture	0.8	2.8	1.1	1.6	6.2
Humanities	7.1	3.1	1.1	5.0	16.3
Education	21.0	50.0	36.0	43.0	14.7
Fine arts	2.5	4.4	26.0	5.4	-
Law	1.5	0.0	18.0	4.4	31.0
Social sciences	18.1	23.0	3.0	14.1	22.0
Total	10.6	26.0	4.4	10.5	18.2

Source: Tables I and II in annex.

The first point to be noted from table C is that the student numbers grew more than proportionally when compared to the numbers of teachers in all fields of study except education, where the rate of growth in teachers was particularly high.

It will also be seen that the growth rates in the numbers of teachers differed widely according to level, and was especially low for junior level teachers in pure science, agriculture, humanities and social sciences. In technology and the medical sciences, the numbers of junior level teachers grew more slowly than the student numbers (and in the second case, more slowly than the average for all teachers). On the other hand, the number of middle level teachers showed a rapid increase in pure science, technology, the medical sciences, education and social sciences, although in pure science the average annual growth rate in student numbers was still higher than that for medium level teachers.

Generally speaking, the change in the number of teachers was relatively slow in pure science and law. In agriculture, humanities and social sciences, too, the total number of teachers grew much more slowly than that of students.

3. Structural changes in the teaching body

The very short period over which the trend in the number of teachers, by level, was examined obviously cannot reveal any profound structural changes in the profession although, as we have seen, the growth rates in numbers of teachers varied widely according to level.

In considering table D, the reader should bear in mind that the changes noted occurred over a period of only three years.

Table D
 Structural changes in the teaching body
 (1965-1968)

Total number of teachers = 100

Field of study	1965-66			1967-68		
	SL	ML	JL	SL	ML	JL
Pure science	35.4	7.9	56.7	37.3	10.3	52.4
Technology	33.2	1.6	65.2	32.3	2.4	65.3
Medical sciences	43.7	19.8	36.5	41.1	23.1	35.8
Agriculture	40.9	35.0	24.1	40.0	36.3	23.7
Humanities	57.6	21.7	20.7	61.0	20.5	18.5
Education	25.0	62.5	12.5	14.9	74.5	10.6
Fine arts	15.8	79.3	4.9	14.6	77.1	8.3
Law	79.0	4.7	16.3	72.4	4.1	23.5
Social sciences	50.5	15.2	34.3	56.0	18.8	25.2
Total	42.8	14.1	43.1	43.0	20.7	36.8

Source: See table I in annex.

Apart from these structural changes in the composition of the teaching body, classified by level, the available data gave no indication of the means employed to cope with the growth in student numbers, nor of the proportion of women teachers or part-time teachers in the total.

III. Conclusions

Both for the first period (as shown by the UNESCO figures) and for the second, the change in the number of teachers seems to have been slower than for students. The student/teacher ratios have thus deteriorated, in higher education as a whole, and also, as confirmed by table B, for the years 1965-68 in every field of study taken separately (except medical sciences, where the ratio remained constant).

STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS (a)
 (ALL HIGHER EDUCATION)
 EFFECTIFS D'ETUDIANTS DANS LES ETABLISSEMENTS (a)
 DE TYPE UNIVERSITAIRE
 (ENSEMBLE DE L'ENSEIGNEMENT SUPERIEUR)

COUNTRY : SWEDEN

PAYS : SUEDE

TABLE : II - Absolute figures
 and Indexes
 TABLEAU:II- Chiffres absolus
 et Indices

Field of specialisation/Branches d'étude	Years / Années		1965/66		1966/67		1967/68		1968/69	
	TOTAL	INDICES INDEXES	TOTAL	INDICES INDEXES	TOTAL	INDICES INDEXES	TOTAL	INDICES INDEXES	TOTAL	INDICES INDEXES
Pure Sciences Sciences pures	10 386	100	12 103	117	14 770	142	17 232	166		
Technology Technologie	8 377	100	9 251	110	10 526	126	11 047	132		
Medical Sciences Sciences médicales	6 947	100	7 316	105	7 790	112	8 698	125		
Agriculture	943	100	996	106	1 069	113	1 131	120		
Humanities Lettres	18 044	100	21 608	120	23 329	129	28 349	157		
Education (b)	298	100	380	128	450	151	450	151		
Law Droit	3 069	100	4 187	136	5 578	182	6 912	225		
Social Sciences Sciences sociales	22 936	100	27 930	122	34 871	152	41 309	180		
Other Autres		-		-		-	2 143	-		
Total	71 050	100	83 771	118	98 383	138	117 271	165		

- Notes : (a) For source and breakdowns by field of specialisation, see table I.
 (b) Physical training only.
 (c) For this year, the source is different : "Statistika Meddlanden"
 from the Central Bureau of Statistic (rapport n° U 1969:6).
 (d) See note b, table I.
 (e) Does not include "Alnarpinst." (Agriculture).
 (f) Include only "Lärarhögskolas Ämneslärarlinje" (Education).

- Notes : (a) Pour source et composition des branches, voir tableau I.
 (b) Education physique seulement.
 (c) Pour cette année seulement, la source est différente :
 "Statistika Meddlanden" du Bureau central de statistique
 (rapport n° U 1969:6).
 (d) Voir note b, tableau I.
 (e) Ne comprend pas "Alnarpinst." (Agriculture).
 (f) Comprend seulement "Lärarhögskolas Ämneslärarlinje" (Education).

SWITZERLAND

There is no Federal authority responsible for education in Switzerland, but the "Education, Science and Arts Division" attached to the Department of the Interior deals with certain educational questions. The only two educational institutions for which the Federal Government is responsible are the Federal Polytechnic School in Zurich, and, since 1st January 1969, the Lausanne University Polytechnic School, other institutions coming under the competent Cantonal authorities. It is thus difficult to state any general rules governing the hierarchy of the teaching profession in Switzerland.

Some general criteria however can be discerned, in spite of cantonal differences.

I. Criteria for the recruitment and promotion of teaching staff

A distinction is generally made between ordinary and extraordinary professors; for some of the latter, teaching is a subsidiary occupation. Professors put in about seven hours' teaching a week, or longer in the exact sciences, assisted by chargés de cours, privat-docents, readers and assistants. A privat-docent must be recognised by the university for some piece of academic work. This normally constitutes the first rung of the academic ladder. Likely candidates may, however, be offered specific posts. The privat-docent must also be a specialist in his own field. The terms and criteria for recruiting staff vary appreciably from Canton to Canton (1). The number of assistants also varies widely according to the Canton and faculty concerned.

The "Report of the Federal Advisory Commission on Aid to Universities" estimated that in 1962-63 there were some 600 ordinary professors, representing about 30 per cent of the teaching body. Nearly all (94 per cent) made teaching their chief occupation. Ordinary professors play an important role as most of them occupy chairs for which statutory provision is made. The present structure of the Swiss universities is largely based on such chairs, and teaching and research revolve around them. Furthermore, ordinary professors are usually appointed to the chief university functions (Rectorate, heads of scientific institutes and teaching hospitals).

It has been evident for some time past that the "cumulative burden of teaching, research and administrative work is often beyond the capacity of a single person(2)". Other solutions are therefore being tried. For example, an institute or teaching hospital may be directed by a panel of professors; the teaching in a given discipline may be provided by several professors of the same rank, etc..

In addition to these 600 ordinary professors, there were about 350 extraordinary professors, representing some 17 per cent of the whole teaching body. For three-quarters of them, university teaching was their main occupation. There are considerable differences between full-time extraordinary professors (who play a similar role to that of ordinary professors) and part-time extraordinary professors.

(1) In the Canton of Vaud, for example, extraordinary professors are ostensibly employed on a full-time basis, while in Basile this applies only to ordinary professors.

(2) Report of the Federal Advisory Commission on Aid to Universities headed by Labhardt.

Assistant professors represented barely 2 per cent of the total teaching body, but in 1962-63, there were 500 privat-docents, representing about 15 per cent of the teaching body. Such staff cost the university remarkably little, as in general they have a principal occupation, and ipso facto, may tend to become scarcer as time goes on. Nearly all the chargés de cours work on a part-time basis. In 1962-63, they represented about 18 per cent of the teaching body. University readers in French Switzerland occupy a position comparable to that of chargés de cours in German Switzerland, and represented 8 per cent of the teaching body. Like chargés de cours, readers nearly always teach on a part-time basis.

To complete the picture, some visiting professors are employed, but they have always been few in number.

II. Trends in numbers of teachers and students in higher education from 1950 to 1963

It will be noted that junior level teachers are not included in the statistics given below. This means that any attempt at international comparison must be of very limited scope as, especially during the last ten years, many countries have coped with the rapid rise in requirements of teachers caused by the considerable increase in student numbers by making wide use of junior level teachers.

1. Student/teacher ratios and numbers

Tables I and II in annex show the numbers of university teachers and students in a few main fields of study. The figures are taken from the Statistical Yearbooks of Switzerland (1950-1964), and cover only senior and middle level teachers.

Some additional information is, however, provided by the "Federal Council's Message to the Assembly on Federal Assistance to the Cantonal Universities", which gives the total number "of teachers and their assistants" as 5,000 in 1963. Some details of the distribution of assistants were supplied by the Federal Advisory Commission on Aid to Universities, and are summarised below:

Table A

Full-time (a) research, administrative and technical assistants classified by faculties

Winter 1962/63	Research assistants	Administrative and technical assistants
Science	539.5	456.5
Technology	384.5 (b)	830.5 (b)
Medicine	1,264.5	-
Veterinary medicine	44.5	71.0
Humanities	94.0	29.5
Law and social sciences	64.0	26.5
Total	2,391.0	1,414.0

Source: op.cit.

Notes: (a) Including part-time assistants classified as full-time, owing to the importance of their work.

(b) For the Federal Polytechnic, Zurich, there should be added to this figure over 2,000 academic, technical and administrative assistants. These are paid out of special funds under private contract, or employed in ancillary institutions.

Various student/teacher ratios were calculated from tables I and II in annex, as shown in table B.

Table B
Student/teacher ratios in 1952 and 1963

	S/SL	S/ML	S/SL+ML	S/SL	S/ML	S/SL+ML
	1952			1963		
Pure science + technology + agriculture + architecture + fine arts	19.5	29.6	10.9	24.6	34.8	14.4
Medical sciences	18.7	18.6	9.3	18.4	14.2	8.8
Humanities and education	11.6	18.6	7.2	24.2	29.7	13.3
Law and social sciences	26.0 (a)	31.1 (a)	19.1	36.5	40.2	14.2
Total	13.1	17.7	7.3	25.2	29.8	13.7

Note: (a) 1951.

UNESCO estimated the number of university teachers at 2,404 in the year 1961-62, when the number of students was about 23,437 (1). The student/total number of teachers ratios would thus be 1/9.7.

Additional information on distribution of teaching body

Some supplementary data were obtained for 1965-66 and 1966-67. The total number of senior level teachers seems to have been 2,342 in 1965-66, of which 1,151 were established teachers and 1,191 on contract. In 1966-67, the total number was only 2,304, of which 1,069 were established teachers, and 1,235 on contract. The statistics seem to indicate, however, that the staff of the Federal Polytechnic, Zurich, were not included in these figures. The last line of table C shows the division of different categories of staff in all fields of study for the year 1962/63. The distribution of the teaching body by field of study in 1962-63 was as shown in table C, based on the indications of the Labhardt Report.

(1) World Survey of Education, Volume IV.

Table C

Breakdown of teaching staff by level and main field of study, 1962-63

Field of study	Level ordinary	Professors		honorary and assistant	Privat- docents	Chargés de cours	Readers
		extra- ordinary	honorary and assistant				
Science	30%	22%			24%	16%	
Technology and architecture	29%	16%			20%	28%	
Agronomics	38%	17%			28%	15%	
Medical sciences	25%	20%			48%	4%	
Humanities	87%	31%			29%	23%	
Law and social sciences	34%	17%			17%	27%	
Rounded average	30%	17%	2%		25%	18%	8%

Complementary data on student/teacher ratios

The study referred to above also gave the student/full-time teacher ratios, by main field of study, for the year 1962-63. The ratios are given below.

Table D
Student/full-time teacher ratio in 1962/63

Theology	13
Humanities	34
Law, economics and social sciences	49
Medicine	27
Veterinary medicine	8
Science	23
The Federal Polytechnic School, Zurich, the Lausanne University Polytechnic School and the Geneva School of Architecture	35
Average	35

The average number of students attending lectures and taking part in practical work, by field of study, are still more interesting - see tables E and F below.

Table E
Average number of students attending lectures (1962-63)

	10 or less	11 to 20	21 to 40	41 to 100	100 or over	Total
Theology	21	21	26	26	6	100
Humanities	12	25	25	26	12	100
Law, economics and social sciences	9	18	20	37	16	100
Medicine	10	15	23	38	14	100
Veterinary medicine	41	46	13			100
Science	20	28	25	16	11	100
Federal Polytechnic School, Zurich - Lausanne University Polytechnic School - Geneva School of Architecture	11	18	19	27	25	100
Average	13	21	23	28	15	100

Table F
Average number of students taking part in practical work (1962-63)

	10 or less	11 to 20	21 to 30	31 to 60	61 or over	Total
Theology	31	38	18	11	2	100
Humanities	26	29	15	21	9	100
Medicine	16	16	13	28	27	100
Veterinary medicine	46	42	12			100
Science	26	35	14	15	10	100
Federal Polytechnic School, Zurich - Lausanne University Polytechnic School - Geneva School of Architecture	18	23	14	21	24	100
Law, economics and social sciences	12	20	19	30	19	100
Average	22	27	15	21	15	100

Source: Labhardt Report, pp.43 and 45.

2. Annual growth rates of university enrolments 1950-1963

These rates are shown in table G:

Table G

Annual growth rates of university enrolments between 1950 and 1963

(in percentages)

	Teachers			Students
	SL	ML	SL + ML	
Pure science, technology, architecture, fine arts	2.3	2.9	2.3 (a)	4.9 (a)
Medical sciences	1.5	2.1	1.8	1.3
Humanities and education	0.2	2.2	1.0	6.0
Law and social sciences (1951-63)	1.9	2.8	2.2	4.8
Total	1.4	2.4	1.8 (a)	5.0 (a)

Source: Tables I and II, annex I.

Note: (a) for the period 1952-1963.

It will be seen that, except in medical sciences, trends in number of teachers, overall or separately for senior and middle level teachers, have always increased more slowly than student numbers. Table H indicates the changes in the respective proportions of senior and middle level teachers.

III. Composition of the teaching body at university level

Few data are available on this point. In particular, the lack of statistics on assistants and other junior level teachers makes it impossible to distinguish generally between teachers at the three levels usually considered. Table I shows between brackets the number of assistants at the Federal Polytechnic.

The UNESCO "World Survey of Education" (Volume IV) reckoned that there were 1,282 part-time teachers in 1961-62 out of a total of 2,404 - about 53.3 per cent.

Similarly, the figures for 1965 and 1966 show 1,151 and 1,069 established teachers, against 1,191 and 1,235 auxiliary teachers, respectively, so that the latter represented 50.9 per cent in 1965 and 53.6 per cent in 1966 of the whole teaching body.

No data have been collected on the numbers of women teachers in higher education, nor on overtime worked.

IV. Conclusions

This study of quantitative trends in teaching staff in higher education in Switzerland covered only a fraction of the total number, i.e. senior and middle level teachers.

Except in the case of medical sciences, the trend has been in the direction of a larger student/teacher ratio.

Data collected from different sources indicate that over 50 per cent of teachers were employed on an auxiliary basis.

Table H

Structural changes in the teaching staff in
university-type education (concerns only SL+ML)

(as percentage of total SL and ML teachers)

Field of study	Level	SL	ML
Pure science			
Technology	1950/51	60.2	39.8
Architecture			
Agriculture	1963/64	58.6	41.4
Fine arts			
Medical sciences	1950/51	49.7	50.3
	1963/64	47.8	52.2
Humanities + education	1950/51	61.5	38.5
	1963/64	55.2	44.8
Social sciences + law	1950/51	54.1	45.9
	1963/64	52.4	47.6
Total	1950/51	57.1	42.9
	1963/64	54.2	45.8

ANNEX I

Table I

TEACHING STAFF (FULL-TIME AND PART-TIME) BY STATUS AND FIELD OF SPECIALISATION
IN UNIVERSITY TYPE INSTITUTIONS

SL = Senior Level (a)
ML = Middle Level (a)
JL = Junior Level (a)

Absolute Figures

Year	Field of Special.				PURE SCIENCE, TECHNOLOGY ARCHITECTURE, AGRICULTURE AND FINE ARTS				MEDICAL SCIENCES				HUMANITIES AND EDUCATION				SOCIAL SCIENCES AND LAW				TOTAL			
	SL	ML	JL (b)	T	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T	SL	ML	JL	T
1950/51	309	204	(220)	513	185	187		372	268	168		436	152	129		281	914	688						
1951/52	306	223	(226)	529	191	184		375	268	189		457	148	124		272	913	720						
1952/53	321	231	(222)	552	191	187		378	262	191		453	156	123		279	930	732						
1953/54	322	239	(237)	551	299	201		400	269	185		454	166	117		283	956	742						
1954/55	328	214	(237)	542	200	206		406	274	195		469	169	151		300	971	746						
1955/56	348	237	(239)	555	205	215		420	270	196		466	168	138		306	971	786						
1956/57	346	248	(254)	594	216	215		431	274	209		483	171	155		326	1,007	827						
1957/58	380	265	(280)	645	213	223		436	284	198		482	180	146		326	1,057	832						
1958/59	390	286	(282)	676	222	218		440	288	199		487	181	153		334	1,081	855						
1959/60	409	281	(302)	690	237	231		468	299	198		497	187	151		338	1,132	861						
1960/61	387	283	(307)	570	254	258		472	295	217		512	184	158		342	1,100	896						
1961/62	404	300	(335)	704	224	251		475	301	224		525	177	163		340	1,106	938						
1962/63	396	273	(387)	669	213	228		441	273	206		479	168	155		323	1,050	862						
1963/64	418	295	(406)	713	224	245		469	273	222		495	185	168		353	1,100	930						
1964/65																								
1965/66																								
1966/67																								

Sources : Statistical Yearbooks of Switzerland.

Notes : (a) In general, the following definitions should be understood: SL = ordinary, extraordinary and honorary professors; ML = lecturers, "privat-docents" and titular professors; JL = lecturers, "privat-docents" and titular professors. However, statistics for the Federal Polytechnic Schools have been based on a slightly different definition; SL = ordinary and extraordinary professors; ML = "privat-docents" (but not lecturers) which, according to the Labhardt report, numbered 90 in 1962/63. Similarly, the law statistics for Saint-Gall are based upon the following conception: SL = ordinary and extraordinary professors; ML = honorary and titular professors, "privat-docents", lecturers, professors of public courses.

- (b) Only assistant lecturers of the Federal Polytechnic School. To ensure comparability these figures have not been included in the total.
- (c) Total teachers 1955 and 1966:

Established	Auxiliary	Total
1955/66	1,151	1,191
1966/67	1,069	1,235

Auxiliary

Total

Table I bis (Indexes)

/ Teaching staff (full-time and part-time) by status
and field of specialisation in university-type
institutions

Field of spec- ialis- ation Year	Pure science, technology, archi- tecture, agricul- ture & fine arts		Medical sciences	Human- ties & education		Social sciences & law		Total		
	JL	T		T	T	T	SL	HL	T	
1950/51	(100)	100	100	100	100	100	100	100	100	
1951/52		103	101	105	97	100	105	105	102	
1952/53		108	102	104	99	102	106	106	104	
1953/54		109	108	104	101	105	108	108	106	
1954/55		106	109	108	107	106	108	108	107	
1955/56		110	113	107	109	106	114	110		
1956/57		116	116	111	116	110	120	114		
1957/58		126	117	111	116	116	121	118		
1958/59		132	118	112	119	118	124	121		
1959/60		135	126	114	120	124	125	124		
1960/61		131	127	117	122	120	130	125		
1961/62		137	128	120	121	121	136	128		
1962/63		130	119	110	115	115	125	119		
1963/64	(185)	139	126	114	126	120	135	127		
1964/65								...		
1965/66								146 (a)		
1966/67								144 (a)		

Source: See table I.

Note: (a) See note (c) on table I.

Table II - Absolute figures & indexes
Student enrolments in university-type institutions (a)

Field of spec- ialis- ation Year	Technology and agriculture		Medical sciences		Humanities and education		Law and social sciences		Total	
	Total	Index- es	Total	Index- es	Total	Index- es	Total	Index- es	Total	Index- es
1950/51	-		3,469	100	3,122	100	-	-	-	
1951/52	-		3,466	100	3,009	96	3,860	100	-	
1952/53	6,039	100	3,414	98	2,968	95	3,788	98	16,209	100
1953/54	6,000	99	3,453	100	3,049	98	3,682	95	16,184	100
1954/55	5,444	90	3,373	97	3,099	99	3,682	95	15,598	96
1955/56	5,637	93	3,326	96	3,391	109	3,586	93	15,940	98
1956/57	5,986	99	3,183	92	3,585	115	3,693	96	16,447	101
1957/58	6,648	110	3,261	94	3,875	124	3,825	99	17,609	109
1958/59	7,171	119	3,284	95	4,251	136	4,074	106	18,780	116
1959/60	7,574	125	3,279	95	4,691	150	4,347	113	19,891	123
1960/61	7,096	118	3,355	97	5,029	161	4,784	124	20,264	125
1961/62	8,804	146	3,682	106	5,513	177	5,367	139	23,366	144
1962/63	9,558	158	3,840	111	6,193	198	6,048	157	25,639	158
1963/64	10,267	170	4,127	119	6,604	212	6,755	175	27,753	171

Source: Statistical yearbooks of Switzerland, 1951-1964.

Note: (a) In the statistical yearbooks of Switzerland the following groups of students have been distinguished: theology, law, medical sciences, humanities and sciences. Included with the faculty of law are: schools of political science, economic sciences, social sciences (with the exceptions mentioned below) and commercial sciences of Berne, Fribourg, Geneva, Lausanne, Neuchatel and Zurich; the institute for economic and social studies of St. Gallen is included in law. Included with the faculty of medicine are: the sections of dentistry and veterinary medicine (with the exceptions mentioned below). Included with humanities are: the Basle schools for political and social sciences, the teacher training school of Berne, as well as the school of interpreters and the school of sciences of education in Geneva. Included with the faculty of sciences (technology) are: in Berne: the teacher training school; in Fribourg: the school of medicine; in Geneva: the school of architecture; in Lausanne: the school of pharmacy. The polytechnical institute of Lausanne and the federal polytechnical institute are also included in technology. These remarks also apply to the tables concerning teaching staff.

TURKEY

Almost all Turkish universities are public institutions but each was established by separate legislation. They are self-governing bodies and not attached to any government department.

I. Criteria for recruitment and promotion of teaching staff

In Turkey, university professors are generally appointed to chairs, and as such are responsible for the teaching of particular subjects. Apart from their own lectures, they supervise the various teaching activities of the staff in their department and direct certain practical work. Research staff, scientists or eminent artists may be asked to give lectures in their special subjects. Assistant professors supplement the lectures of the professors, particularly by organising and supervising periods of practical work. They are helped by assistants. Lecturers teach subsidiary subjects, e.g. foreign languages, etc.

It has not been possible to determine the percentage of unqualified teachers. Criteria for selection are as follows: candidates must have a university degree or good practical experience and must be approved by the Ministry of Education or by the Council of Professors of the institute or university in which they will be called upon to exercise their duties.

In addition to the teaching staff there are translators, librarians, etc., who directly or indirectly contribute to the teaching activities of the academic staff. Teaching staff are allowed to accept paid work outside the university, provided that these activities do not exceed ten hours per week. Promotion is automatic and takes place every three years.

II. Trends in numbers of teachers and students in higher education

A. University education

1. Student/teacher ratios and numbers

The number of teachers and students in Turkish universities during the period 1950/65 are shown in tables I and II in annex. It has not been possible to make a breakdown of teachers by level.

Table A shows the student/total teacher ratios in 1950 and 1965:

The preceding information and the data shown in the annex may usefully be supplemented by the figures collected in the course of preparation of the Mediterranean Regional Project (1) for Turkey.

Table B, based on the replies to MRP questionnaires, also gives an idea of the position of teachers in higher education between 1954 and 1964.

(1) MRP/Turkey, OECD, Paris, 1965.

Table A
**Student/teacher ratios
1950-1965**

	1950	1965
Pure science	10.9	13.0
Architecture	6.5	6.7
Technology	6.9	10.2
Medical sciences	9.5	5.9
Agriculture	7.2	9.5
Humanities	12.1	33.9
Education	9.3	14.0
Fine arts	3.1	5.7
Law	66.0	77.4
Social sciences	24.2	23.9
Other subjects	(a)	(a)
Total	13.4	14.2

Note: (a) The group "other subjects" as shown in tables I and II in the annex is divided into two parts applying to two distinct periods:

- from 1950 to 1957 it includes technical schools for girls and boys, the advanced teacher training college, the advanced school of commerce, the technical college, various nursing schools, the advanced institute of Islamic studies, the police institute, the school of mining technology, the advanced section of the Robert College, the Florence Nightingale advanced school for nurses, etc. During this period the student/teacher ratio fell from 7.5 to 7.
- between 1958 and 1965, the group "other subjects" covers only naval colleges. The student/teacher ratio fluctuated around 7.

Table B
**Student/teacher ratios for selected fields of
higher education between 1954 and 1963**

University	Schools of engineering and architecture	Sciences	Medical sciences	Veterinary science	Forestry
1954-55	8.0	6.4	5.7	4.6	27.3
1955-56	7.0	8.7	5.2	6.2	32.8
1956-57	7.2	9.7	5.0	6.3	45.2
1957-58	7.1	10.4	5.8	6.6	60.0
1958-59	7.0	10.8	5.2	5.9	47.5
1959-60	7.0	12.8	4.1	5.6	50.5
1960-61	7.1	16.6	4.4	5.5	52.2
1961-62	6.4	13.6	3.9	4.4	50.1
1962-63	6.3	14.2	3.4	3.5	48.8
1963-64	6.1	10.5	3.7	3.5	48.2

The authors of the MRP survey on Turkey called attention to growing gap between demand and supply in the case of teaching personnel. According to them the overall student/teacher ratio would have been 14 in 1950 and 17 in 1955 and 1962 (1). The figures given appear to relate to university education and a number of non-university institutions of higher education. The same survey gave a ratio for science and humanities together of 9 in 1935 and 30 for 1962.

For higher technical education (university and non-university levels) the MRP report on Turkey gave the information summarised in the following tables.

According to table C a very considerable effort would appear to have been made by 1960, as by this year the teaching body would have increased by 63 per cent whereas the number of students would have remained constant. Between 1935 and 1960 the number of students would have increased twice as fast as the number of teachers. Moreover, the situation would be still more unfavourable if the period 1935-1957 or 1935-1959 were considered. A very definite improvement was achieved between 1958 and 1960. But tables I and II in the annex show a different figure for teachers from that given in the above publication, although student figures are fairly similar. In particular, the "leap forward" in the number of teachers forecast for 1960 is not seen in the tables in the annex.

In medical sciences the above-mentioned report gave the figures summarised in table D.

These figures roughly confirm those shown in the tables in annex. They indicate a deterioration in the teacher/student ratio between 1935 and 1945 followed by a definite improvement owing to the rapid increase in the number of teachers.

In agriculture the figures provided in the MRP study on Turkey are rather different from those put forward in the annex tables. They are generally lower, especially for teachers (table E).

Table C
Teachers and students in technology
from 1935 to 1960

Year	Student/teacher ratio	Number of students	Number of teachers
1935	3	740	222
1940	13	1,225	109
1945	9	2,135	236
1950	8	2,673	330
1955	9	3,655	388
1956	12	4,178	359
1957	15	5,621	367
1958	11	6,143	565
1959	10	6,377	627
1960	6	6,372	1,024

(1) MRP/Turkey, OECD, Paris, 1965.

Table D

Numbers of teachers and students in
medical sciences between 1935 and 1962

Year	Number of institutions	Student/teacher ratios	Number of students	Teachers
1935	3	9	1,738	202
1940	3	9	2,268	244
1945	3	15	3,635	235
1950	4	10	4,593	454
1955	4	8	4,368	534
1956	4	7	4,057	558
1957	4	6	4,229	681
1958	4	7	4,003	598
1959	4	7	4,898	726
1960	6	6	5,069	913
1961	6	4	4,763	1,115
1962	10	5	5,510	1,193

Table E

Numbers of teachers and students in
agriculture between 1935 and 1960

Year	Student/teacher ratio	Number of students	Teachers
1935	1	124	115
1940	1	149	125
1945	7	866	127
1950	8	1,148	138
1955	7	1,550	210
1956	6	1,455	240
1957	6	1,776	280
1958	10	2,829	284
1959	12	3,300	265
1960	10	3,578	375

On the basis of the data at present available, no really satisfactory explanation can be provided. It is, however, quite likely that certain schools or fields were not included for some years in the MRP statistics, particularly veterinary and forestry schools and a number of regional schools. For example, according to the general yearbooks, the number of university-level students in 1958 amounted to 3,286; in addition there were 438 non-university students, i.e. a total of over 3,700 students compared with the 2,800 quoted in the above publication. The following year, however, the gap was considerably narrowed as will be seen from the tables in the annex.

As far as certain advanced teacher-training schools are concerned, the MRP report on Turkey also provided a number of figures for 1945 and 1962. These are given in table F.

According to these figures the ratio of teachers to students would have been 16.8 in 1945 and 10 in 1962. It will be noted that there was a steep fall in the number of teachers between 1960 and 1962, i.e. -28.1 per cent in two years.

In fine arts, the MRP survey showed very low student/teacher ratios. Indeed, according to the figures in table G there were actually more teachers than students in 1945.

For social sciences (university and non-university) and also apparently for law the MRP report on Turkey gave the figures shown in table H.

It will be seen that there is a definite and comparatively steady increase in the teacher/student ratio in this field of study.

Table F

Numbers of teachers and students in education
(higher teacher training colleges) between 1945 and 1962

Year	Institutions	Students	Teachers
1945	2	438	26
1950	2	874	89
1955	2	582	78
1956	3	613	89
1957	3	719	96
1958	3	723	106
1959	3	917	108
1960	4	1,096	192
1961	4	1,407	142
1962	4	1,378	138

Table G

Numbers of teachers and students between 1935 and 1962

Year	Student/teacher ratio	Number of institutions	Number of students	Teachers
1935	6	1	364	57
1940	4	1	400	103
1945	1	2	116	126
1950	2	2	139	88
1955	1	2	155	113
1956	2	2	185	112
1957	2	2	223	135
1958	2	2	234	135
1959	1	2	203	164
1960	2	2	208	107
1961	3	2	276	104
1962	3	2	306	107

Table H

Numbers of teachers and students in social sciences (and law) between 1935 and 1962

Year	Student/teacher ratios	Number of institutions	Number of students	Number of teachers
1935	26	5	2,493	97
1940	34	5	4,892	144
1945	37	6	7,282	199
1950	44	6	10,105	228
1955	47	8	13,727	293
1956	55	8	20,081	364
1957	57	9	20,643	360
1958	54	9	21,133	394
1959	55	10	22,922	420
1960	50	10	24,418	484
1961	61	10	30,034	495
1962	67	11	31,514	473

2. Annual average growth rates in university staff and student enrolments

These rates which are summarised in table I, confirm, except for a few fields of study, a more rapid growth for students than for teachers.

Table I

Growth rates in numbers of teachers and students in universities between 1950 and 1965
(in percentages)

	Teachers	Students
Pure sciences	7.6	8.9
Architecture	6.6	6.8
Technology	7.0	9.9
Medical sciences	9.5	6.1
Agriculture	6.8	8.8
Humanities	3.7	11.0
Education	6.7	9.6
Fine arts	5.3	9.4
Law	4.9	5.4
Social sciences (1950-57)	6.4 10.9	6.3 9.9
Others (1958-65)	0.0	0.4
Total	6.4	7.2

B. Non-university higher education

A few figures are also available for non-university higher education. They relate to technology, agriculture, education, the social sciences and the category "other subjects". The great disparity in statistical periods precludes an overall approach. Each field of study will therefore be studied separately.

1. Enrolments and student/teacher ratios

Tables III and IV in annex show the number of teachers and students at certain periods in certain fields of non-university higher education.

The trends in the student/teacher ratios are shown in table J.

Table J

Trends in student/teacher ratios in selected fields of non-university higher education

	Beginning of period	End of period
Technology 1958-1965	6.3	13.4
Agriculture (a) 1954-1963	6.7	11.8
Education 1950-1965	4.0	24.1
Social sciences 1950-1965	28.4	86.8
Other subjects	7.0	16.8

Note: (a) Schools belonging to category B as defined for the MRP, i.e. agricultural, veterinary and forestry schools providing two- or three-year courses for students who have completed the upper secondary school course.

2. Annual growth rates in numbers of teachers and students in non-university higher education

Table K

Annual growth rates of teachers and students in non-university higher education

(in percentages)

	Teachers	Students
Technology 1950-1965	14.0	20.0
Agriculture 1954-1963	0.4	7.0
Humanities 1950-1965	6.6	
Education 1950-1965	4.1	17.4
Social sciences 1950-1965	8.8	17.1
Other subjects 1961-1965	17.2	46.0

Table K very clearly reveals the wide gap between teacher and student growth rates.

III. Composition of the teaching body in higher education

In answer to the "complementary questions", it was indicated that there was a general shortage of teachers in Turkey. In higher education, shortages are particularly noticeable in the pure sciences and technology. The shortage in pure sciences may well be due to the fact that teachers in this field cannot find any work outside their hours of teaching, which limits their possibility of earning additional resources and therefore reduces the number of applicants for posts. Similarly, graduates in technology prefer to work outside the university, i.e. where their remuneration is higher. Moreover, the training of teachers in technology is comparatively more expensive and difficult than in other fields.

1. Proportion of junior level staff

No breakdown was made by level of teachers. It is therefore unfortunately impossible to determine the proportion in which assistants and other teachers at various levels have helped to satisfy the existing demand for teachers.

2. Proportion of women teachers

The "World Survey of Education", (Volume IV) published by UNESCO gives the number of women participating in higher education for certain years. Figures covering the period 1957-1961 are shown in table L.

Table L
Proportion of women teachers in higher education

Type of institution	Year	Number of institutions	Full-time and part-time teachers		Percentage of women teachers
			Total	of whom women	
Universities and institutions awarding equivalent degrees	1961-62	29	2,916	580	20
	1960-61	27	2,807	558	20
	1959-60	26	2,779	514	18
	1958-59	26	2,679	457	17
	1957-58	24	2,070	367	18
Non-university: teacher training	1961-62	13	475	159	33
	1960-61	11	382	114	30
	1959-60	9	404	136	34
	1958-59	8	296	76	26
	1957-58	7	273	76	28
Other	1961-62	22	961	137	14
	1960-61	18	882	99	11
	1959-60	15	728	85	12
	1958-59	15	686	81	12
	1957-58	13	604	66	11

These figures show a slight relative improvement in the proportion of women teachers, confirmed below for longer periods (1935-1962) except in the fields of education and medical sciences (table M).

Table M
Proportion of women teachers in selected fields of higher education
(1935 - 1962)

Year	Social sciences		Technology		Medical sciences		Sciences		Humanities and fine arts		Agriculture		Education	
		%		%		%		%		%		%		%
1935	0		1	1.5	68	33.6	23	14.8	5	8.8	0		15	57.6
1962	51	10.8	110	10.7	246	20.6	207	34.6	13	12.1	46	12.3	44	31.4

Source: MRP/Turkey, OECD, Paris, 1965.

According to the Directorate of the department of social planning the proportion of women teachers in higher education as a whole rose from 16 per cent to 24 per cent between 1944-45 and 1965-66 (1).

3. The role of part-time teachers, and overtime

No very satisfactory information was obtained regarding part-time teachers. The figures shown in the tables in the annex relate to teachers as a whole and no distinction is made between part-time and full-time staff.

On the other hand, considerable overtime is probably worked, although it cannot be quantified. In fact, the replies to the "complementary questions" have shown that, generally speaking, teachers take on a heavier work load in all fields owing to the shortage of staff.

IV. Conclusions

The trends in numbers of teachers and students in universities between 1950 and 1965 show that the number of teachers has undergone a relatively slower increase. The only exceptions are in medical sciences, the social sciences and, between 1950-67, the group of "other subjects". In non-university higher educational institutions an even greater decline is noticeable in all fields where it has been possible to review the situation, although the reference periods vary considerably.

(1) Answers to the "complementary questions".

ANNEX I

Table I
TEACHING STAFF BY FIELD OF SPECIALISATION IN UNIVERSITY INSTITUTIONS (a)
(Absolute figures and indexes)

Field of special. Year	PURE SCIENCE		ARCHI-TECTURE		TECHNOLOGY		MEDICAL SCIENCES		AGRI-CULTURE		HUMANITIES		EDU-CATION		FINE ARTS		LAW		SOCIAL SCIENCES		OTHER		TOTAL	
	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL INDEXES	IN-DEXES	TOTAL	IN-DEXES
1950/51	186	100	42	100	172	100	449	100	166	100	233	100	92	100	96	100	96	100	211	100	1,842	100		
1951/52	192	103	44	105	186	108	425	95	168	101	238	102	59	64	113	118	113	114	117	122	159	75	1,814	98
1952/53	195	105	45	107	158	92	461	103	175	105	236	101	71	77	199	114	112	123	128	177	84	1,852	104	
1953/54	204	110	49	117	159	92	499	111	193	116	243	104	79	86	105	109	104	105	138	144	195	91	1,966	107
1954/55	219	116	55	131	182	106	534	119	210	127	262	112	78	85	113	118	109	110	135	141	197	93	2,094	114
1955/56	221	119	57	156	237	138	591	132	260	157	268	115	81	88	114	119	115	116	105	109	280	155	2,332	127
1956/57	229	123	69	164	252	147	742	165	280	169	275	118	82	89	147	153	118	114	123	128	319	151	2,636	143
1957/58	234	126	71	169	278	162	631	152	284	171	270	203	86	95	99	103	122	123	134	140	435	206	2,694	146
1958/59	269	145	82	195	305	177	1,081	241	357	215	320	138	108	117	104	108	151	132	199	207	28	100	2,984	162
1959/60	272	148	77	183	316	184	1,114	248	376	227	330	143	237	225	194	104	132	133	208	217	29	104	3,161	172
1960/61	271	146	63	150	275	160	1,115	246	415	250	366	157	149	162	104	108	131	132	184	192	34	121	3,105	169
1961/62	349	188	65	155	272	158	1,140	253	404	243	389	167	219	238	142	148	123	124	194	202	29	104	3,326	181
1962/63	456	245	99	236	372	216	1,152	257	399	240	321	138	196	213	212	221	162	164	193	201	29	104	3,591	195
1963/64	432	232	102	245	394	229	1,268	282	419	252	391	168	211	229	153	159	162	164	194	202	29	104	3,755	204
1964/65	496	267	102	243	428	219	1,534	342	424	255	388	167	230	250	152	158	171	173	205	214	28	100	4,158	226
1965/66	559	301	109	260	474	295	1,757	391	444	267	399	171	243	264	207	216	186	188	244	254	28	100	4,650	252

Source : General yearbooks and second phase of the Mediterranean Regional Project for Turkey.

Notes : (a) Establishments taken into account for the study : Universities and institutions of the same type attached to universities :

- Ankara University with ten faculties and four schools for higher education (dental school, school for journalism, special schools of law and medicine);
- Istanbul University with thirteen faculties and two higher education schools (school for journalism and language, school);
- Middle-east Technical University of Istanbul with six faculties and two higher education schools (Makka technical school and language school);
- The University of Ege at Izmir with four faculties;
- Ataturk University at Erzurum with three faculties and one higher language school;
- Hacettepe University at Ankara with three faculties and three higher education schools (dental school, school of economics and school of physiotherapy);
- Karadeniz University (Black Sea) at Trabzon.

- The academies of Fine Arts; The State Conservatory of Music; the Engineering Schools of Izmir, Yildiz and Elazig; Three Higher Teacher Training Colleges;

- Commercial Teacher Training Colleges; Technical Teacher Training Colleges; Four Higher Islamic Institutes; Higher Naval School;
- Private Institutions: Six Engineering Schools; Two Higher Schools of Chemistry; Two High Schools of Journalism; Two High Schools of Pharmacy; The Higher School of Dentistry.

(b) Since 1958/59, the indexation must start again because only Naval schools are included.

Table II
STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS (a)
(Absolute figures and indexes)

Field of spec. Year	PURE SCIENCE TOTAL INDEXES	ARCHITECTURE TOTAL INDEXES	TECHNOLOGY TOTAL INDEXES	MEDICAL SCIENCES TOTAL INDEXES	AGRI-CULTURE TOTAL INDEXES	HUMANITIES TOTAL INDEXES	EDUCATION TOTAL INDEXES	FINE ARTS TOTAL INDEXES	LAW TOTAL INDEXES	SOCIAL SCIENCES TOTAL INDEXES	OTHER TOTAL INDEXES	TOTAL TOTAL INDEXES
1950/51	2,056	100	274	100	1,192	100	4,264	100	1,202	100	2,829	100
1951/52	1,308	64	335	122	1,259	106	4,504	106	1,261	105	2,970	105
1952/53	1,682	83	362	132	1,353	117	4,819	113	1,036	86	2,468	88
1953/54	1,201	59	348	127	1,678	141	4,054	95	940	78	2,085	74
1954/55	2,369	116	410	150	1,657	138	4,368	102	1,550	129	1,802	64
1955/56	3,375	166	435	159	1,816	152	4,057	95	1,442	120	2,452	87
1956/57	2,591	127	560	204	2,117	178	4,229	99	1,919	162	3,058	109
1957/58	3,280	161	519	189	2,406	202	4,003	94	3,109	254	2,673	94
1958/59	3,596	177	621	227	2,511	211	4,908	115	3,286	273	3,683	150
1959/60	5,225	291	512	187	2,620	221	4,976	117	3,578	298	5,154	182
1960/61	5,151	253	570	208	2,619	220	5,288	124	3,584	298	8,367	295
1961/62	7,164	352	550	201	2,559	225	5,248	123	3,805	317	10,710	379
1962/63	5,854	288	521	190	2,860	240	5,329	125	3,715	309	9,197	336
1963/64	4,875	239	553	202	3,466	291	7,702	181	3,779	314	10,744	380
1964/65	5,868	288	581	212	4,047	340	9,195	216	4,082	340	11,781	416
1965/66	7,280	558	734	268	4,882	410	10,361	243	4,235	352	13,550	479
1966/67												

Source : See Table I.

Notes : (a) Same establishments as on Table I.

(b) Since 1958/59, "Other" includes Naval Schools. The indexation has been recalculated from that year.

Table III - Absolute figures and indexes

Teaching staff by field of specialisation in non-university institutions (a)

Year	Field of specialisation	Technology		Agriculture		Humanities		Education		Social sciences		Other	
		Total	Index-es	Total	Index-es	Total	Index-es	Total	Index-es	Total	Index-es	Total	Index-es
1950/51		96	100			58	100	129	100	58	100		
1951/52		77	80			57	98	121	94	57	99		
1952/53		81	84			59	102	132	102	59	102		
1953/54		87	91			55	95	142	110	55	95		
1954/55		89	93	71	100	59	102	161	125	59	102		
1955/56		100	104	69	97	76	131	150	116	110	190		
1956/57		202	210	64	90	91	157	175	136	105	181		
1957/58		307	320	60	85	98	169	187	145	118	203		
1958/59		333	347	66	93	130	224	210	163	130	241		
1959/60		370	385	87	123	158	272	197	153	158	272		
1960/61		479	499	100	140	176	303	233	181	176	303		
1961/62		451	470	100	140	156	269	284	220	156	269	9	100
1962/63		471	491	74	104	135	233	144	112	138	238	13	144
1963/64		271	282	74	104	138	238	191	148	139	240	12	133
1964/65		312	325			141	243	220	171	161	278	16	178
1965/66		689	718			151	260	236	183	205	353	17	189

Source: Same source as on table I.

Note: (a) Establishments taken into account for the study: colleges of commerce and economics under the authority of the Ministries; private colleges of commerce and economics; higher technical schools; ten pedagogical institutes for the training of teachers for the lower secondary level.

Table IV - Absolute figures & Indexes
 Student enrolments in non-university institutions (a)

Year	Field of specialisation		Technology		Agriculture		Education		Social sciences		Other	
	Total	Indexes	Total (b)	Indexes	Total	Indexes	Total	Indexes	Total	Indexes	Total	Indexes
1950/51	546	100			514	100	1,649	100				
1951/52	548	100			404	79	1,909	116				
1952/53	758	139			534	104	1,939	118				
1953/54	892	163			565	110	2,380	144				
1954/55	880	161	474	100	771	150	3,359	204				
1955/56	1,047	192	464	98	931	181	3,841	233				
1956/57	1,994	365	422	89	1,224	238	4,721	286				
1957/58	2,143	392	317	77	1,219	237	5,724	347				
1958/59	2,101	385	438	92	1,626	316	6,084	369				
1959/60	2,293	420	601	127	1,775	345	7,948	482				
1960/61	3,459	634	667	141	2,488	484	11,214	680				
1961/62	3,700	678	738	156	2,504	487	9,858	598	63	100		
1962/63	4,159	758	651	137	3,107	604	12,627	766	95	151		
1963/64	4,446	814	874	184	4,106	799	15,143	918	142	225		
1964/65	5,341	978			4,769	928	15,365	932	211	335		
1965/66	8,873	1,625			5,681	1,105	17,784	1,078	285	452		

Source: See table I.

Notes: (a) Same establishments as on table III.
 (b) Pupils of "category B" (see MRP/Turkey).

YUGOSLAVIA

I. Criteria for the recruitment and promotion of teaching staff

Professors are appointed to chairs by the administrative board of the faculty concerned on the strength of their qualifications and publications. Their appointment has to be approved by the faculty council and candidates for the posts of professor or associate professor are required to hold a doctorate. "Docents" (assistant professors) may be appointed on the basis of the degree of "magister" or "specialist" (degrees awarded on completion of post-graduate university studies) though certain faculties require them to hold a doctorate. Lecturers have the same rank and salary as assistant professors and associate professors, but the qualifications required need not be more than, for example, a final university degree, practical experience and teaching ability. "Assistants" (assistant lecturers) working under the supervision of professors are also recruited from among the best students at final degree level. Assistant professors and senior lecturers are re-elected every five years and lecturers and assistant lecturers every three years. Part-time teachers must have the same qualifications as their full-time counterparts. The publication of personal research is an important factor in promotion. Only full professors are appointed for life.

Table A shows the structure of the full-time teaching body in university-type education (faculties and colleges) for 1961-62.

Table A
Full-time teaching body by level in university-type
education 1961-62

	Total	(in percentages)	
		Faculties	Colleges
Total professors	100	100	100
Full professors	26	25	11
Associate professors	27	28	21
Senior lecturers	3	2	16
Assistant professors	36	38	19
Lecturers	8	7	21
Other			
Total auxiliary staff	100	100	100
Assistants	89	90	83
Others	11	10	17

Source: Innovation in Higher Education - Reforms in Yugoslavia, OECD, Paris, 1970.

It may be noted that the largest category represented among the teaching body is not the same in the colleges and faculties.

II. Trends in numbers of teachers and students in higher education

A. University education

1. Student/teacher ratios and numbers

The numbers of students and teachers are available for the period 1950-66. Figures for the period 1938-39 are also shown in tables I and II in annex where they were included in answers to the "complementary questions". Table B shows that the number of students per teacher decreased between 1950 and 1966 leaving great discrepancies according to discipline and level. An overall improvement can be noted in the student/teacher ratio in senior and middle levels.

2. Average annual growth rates

It seemed worth while to show the rates for the period 1950-66 and, where possible, for 1938 to 1966 in table C. An examination of them confirms from another angle what was said in 1. above, i.e. a slower growth by proportion of students to teachers between 1950 and 1966 than between 1938 and 1966.

Table B

Student/teacher ratios in university education
by level of staff and field of study

Field of study		Students SL + ML	Students JL	Students SL + ML + JL
Pure science	1950	35.4	32.2	16.9
	1966	23.0	23.4	11.6
Architecture and technology	1950	18.4	18.6	9.2
	1966	18.2	16.2	8.6
Medical sciences	1950	30.0	10.1	7.6
	1966	16.4	9.4	6.0
Agriculture	1950	20.1	14.7	8.5
	1966	10.9	12.8	5.9
Humanities	1950	30.3	58.0	19.9
	1966	22.5	22.5	12.6
Education	1950	7.6	10.3	4.4
	1966	14.8	29.5	9.8
Fine arts	1950	4.1	32.7	3.7
	1966	5.1	20.7	4.0
Law	1950	35.5	61.2	22.5
	1966	51.9	95.6	33.7
Social sciences	1950	47.7	102.8	32.6
	1966	28.3	59.0	19.1
Others	1950			
	1966			
Average ratios	1950	23.5	20.9	11.0
	1966	19.9	20.8	10.2

Source: Tables I and II in annex.

Table C

Average annual numerical growth rates for teachers
and students between 1950 and 1966 and between
1938 and 1966

(in percentages)

Field of study	Period	Teachers			Students
		SL + ML	JL	Total	
Pure science	1950/66	7.4	6.6	7.0	4.5
Architecture and technology	1938/66	9.8	10.2	10.0	9.3
	1950/66	6.3	7.2	6.7	6.2
Medical sciences	1938/66	9.9	9.2	9.4	7.1
	1950/66	6.1	2.6	3.6	2.1
Agriculture	1938/66	7.3	7.6	7.4	5.4
	1950/66	4.9	1.9	3.3	1.0
Humanities	1938/66	6.0	5.7	5.9	6.4
	1950/66	6.2	9.0	7.3	4.3
Education	1950/66	12.9	10.3	11.9	17.7
Fine arts	1938/66	8.7	8.6	8.7	8.2
	1950/66	2.4	6.8	3.1	3.8
Law	1938/66	5.8	8.0	6.4	4.4
	1950/66	8.7	8.3	8.6	11.3
Social sciences	1938/66	9.1	8.4	8.9	10.2
	1950/66	8.0	8.2	8.1	4.6
Total	1938/66	8.6	9.0	8.8	7.3
	1950/66	6.2	5.1	5.6	5.1

3. Structural changes in teaching staff

These structural changes are shown in table D. The teaching body is divided into senior and middle level teachers on the one hand and junior level teachers on the other. Contrary to what has happened in other countries the weight of junior level teachers diminished slightly between 1950 and 1966.

B. Non-university education

1. Student/teacher ratios and numbers

The numbers of teachers and students in non-university institutes of higher education are shown in tables III and IV in annex. From these tables the student/teacher ratios in these institutions can be calculated (see table E).

Table D

Structural changes in the composition of the
teaching body in university education

(as percentage of total teaching staff)

Field of study	Level	1938-39	1950-51	1966-67
Pure science	SL + ML		47.7	50.5
	JL		52.3	49.5
Technology	SL + ML	49.6	50.3	47.1
	JL	50.4	49.7	52.9
Medical sciences	SL + ML	32.6	25.2	36.4
	JL	67.4	74.8	63.6
Agriculture	SL + ML	55.9	42.4	53.8
	JL	44.1	57.6	46.2
Humanities	SL + ML	53.9	65.7	55.9
	JL	46.1	34.3	44.1
Education	SL + ML		57.9	66.7
	JL		42.1	33.3
Fine arts	SL + ML	80.0	88.8	80.3
	JL	20.0	11.2	19.7
Law	SL + ML	76.5	63.3	64.8
	JL	23.5	36.7	35.2
Social sciences	SL + ML	63.4	68.3	67.5
	JL	36.6	31.7	32.5
Total	SL + ML	53.5	47.1	51.2
	JL	46.5	52.9	48.8

Source: See table I in annex.

A comparison between tables B and E shows that student/teacher ratios (insofar as they are comparable) generally follow contrary trends in university education and non-university higher education. In universities or institutions of equivalent level student/teacher ratios have fallen whether teachers are considered as a whole or by levels. But in other institutions of higher education these ratios have steadily increased.

Comparison of trends in these ratios by field of study as between universities and non-university institutions of higher education is difficult, as the periods reviewed are not identical except in medical sciences and social sciences (where the trend is definitely divergent) and education (where it is partially convergent).

2. Annual growth rates of numbers of teachers and students in non-university institutions of higher education

These trends shown in the following table (F) confirm what was seen above for the total teaching body, but the trends varied according to the field of study under consideration.

Table E

Student/teacher ratios in non-university
institutions of higher education

Field of study	Year	Students/SL + ML	Students/JL	Students/ All teachers
Technology	1958-59	24.4	70.4	18.1
	1966-67	14.9	46.1	11.3
Medical sciences	1950-51	4.9	26.7	4.2
	1966-67	12.2	23.2	8.0
Agriculture	1960-61	16.5	248.6	15.5
	1966-67	10.0	63.8	8.7
Education	1938-39	2.8	(a)	2.8
	1950-51	20.1	366.3	19.0
	1966-67	25.0	134.1	21.1
Social sciences	1950-51	4.2	86.0	4.0
	1966-67	35.7	323.9	32.1
Total	1950-51	14.7	19.1	13.7
	1966-67	23.5	106.2	19.2

Sources: Tables III and IV in annex.

Note: (a) There were no junior level teachers in 1938 in education.

Table F

Average annual growth rate in numbers of teachers and students
in non-university institutions of higher education

(in percentages)

Field of study	Period	Teachers			Students
		SL + ML	JL	Total	
Technology	1958-66	56.0	54.0	55.0	47.0
Medical sciences	1950-66	5.9	13.1	7.6	12.1
Agriculture	1960-66	15.5	33.0	17.0	6.3
Education	1938-66	9.4	-	10.0	8.9
	1950-66	10.2	19.0	11.1	11.8
Social sciences	1950-66	17.8	24.0	18.2	16.5
Total	1950-66	14.6	23.0	15.5	18.0

3. Structural changes in the teaching body

These changes are shown for the periods for which figures are available in table G. It can be inferred that junior level staff has increased far more than proportionally during the period studied than it has in universities (table D).

Table G

Structural changes in the teaching body in non-university institutions of higher education

Field of study	Level	Total teaching body = 100%		
		1938-39	1950-51	1966-67
Technology	SL + ML			75.5
	JL			24.5
Medical sciences	SL + ML		84.4	65.5
	JL		15.6	34.5
Agriculture	SL + ML			86.4
	JL			13.6
Education	SL + ML	100	94.8	84.3
	JL		5.2	15.7
Social sciences	SL + ML		95.3	90.0
	JL		4.7	10.0
Total	SL + ML		92.8	81.9
	JL		7.2	18.1

Source: See table III in annex.

III. Complementary data for the period 1957/58 to 1966/67

A recent study by OECD traces the trend in numbers of teachers and students in the different institutions of higher education for the decade 1957/58 - 1966/67 (1).

Table H shows the trend in student/teacher ratios for each of the three main types of institutions it has been possible to consider. (It includes all students and teachers whether full-time or part-time).

In the faculties, after increasing between 1957 and 1960, the ratio fell until 1964, dropping from 36 to 20 while the student/auxiliary staff ratio fell from 22 to 19. Between 1965 and 1967 these ratios began to increase again.

In the case of colleges two conflicting trends can be noted: the student/teacher ratio fell quite noticeably between 1958 and 1966 while the student/auxiliary staff ratio continued to increase.

Finally, in two-year post-secondary schools, the increase has generally been constant.

In higher education as a whole, after a few swings, the student/teacher ratio has very slightly improved while the ratio for student/auxiliary staff (assistants for the most part) has steadily increased. These differences are confirmed by an analysis of average annual growth rates.

Table I shows that in general the average annual growth rates for teachers is greater than that for students. This is not, however, the case for two-year post-secondary schools, where the increase in students has been nearly twice that of teachers. The particularly rapid increase in the number of part-time students, and the rapid growth of colleges is also noteworthy. On the other hand the increase in auxiliary staff has been relatively slow, particularly in colleges.

(1) Innovation in Higher Education, OECD, Paris, 1970. Table V in annex shows in absolute figures and in index the most fundamental numerical data.

Table H

Student/teacher ratios in institutions of higher education 1957/58 - 1966/67

	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67
Total	22	25	25	27	24	21	19	19	20	21
student/teacher	24	24	24	27	27	26	24	25	27	30
student/auxiliary staff										
Faculties										
student/teacher	29	35	33	36	30	25	21	20	21	22
student/auxiliary staff	21	22	21	22	22	21	18	18	19	21
Colleges										
student/teacher	20	27	14	13	13	13	14	14	13	14
student/auxiliary staff	10	8	16	18	22	16	22	20	21	23
2 year post-secondary colleges										
student/teacher	11	12	15	18	17	17	19	21	22	23
student/auxiliary staff	69	58	65	88	85	90	66	83	91	106

Source: Innovation in Higher Education - Reforms in Yugoslavia, OECD, Paris, 1970.

Table I

Average annual growth rates for students and teachers
in higher education from 1957 to 1966

(in percentages)

	Faculties	Colleges	Post-secondary colleges	All institutions
Total number of students	5.4	41.0	22.5	10.0
Full-time students	4.5	33.0	17.0	7.3
Part-time students	10.1	83.0	30.7	20.7
Teachers	9.2	46.5	12.7	10.6
Auxiliaries	5.9	28.0	16.8	7.1

Finally, by way of complementary information, we give not the development of the structure of the teaching body but recent data showing the distribution of full-time staff at the university of Zagreb by field of study. In 1966 they represented only 50.2 per cent of the full-time staff at the university, of which 26.5 per cent were assistants and 23.7 per cent were teachers in other categories. The distribution of the latter (i.e. not including assistants) is shown in table J.

Table J

Breakdown of university teachers by category, Zagreb, 1966

Field of study	Lecturers	Senior lecturers	Assistant professors	Associate professors	Full professors
Social sciences	32.3	9.5	20.9	19.6	17.7
Natural sciences and engineering	13.8	9.1	25.7	23.9	25.7
Medical sciences	2.4	0.9	32.1	25.9	38.7
Total	18.1	7.5	26.1	22.8	25.5

Source: See table H.

IV. Composition of the teaching body in higher education

1. Part played by women teachers

Table K below shows the percentage of women teachers employed in higher education in the different types of schools between 1957 and 1961. These percentages seem to show a slight growth in the number of women teachers in university education and training colleges and a decline in non-university technical colleges during this short period.

Table K

Part played by women in the different types
of higher education institutions

(in percentages)

	Total number of teachers	Women staff	
		Absolute figures	%
<u>University education</u>			
91 university faculties, 1961-62	8,767	1,781	20.3
11 academies of fine arts, 1961-62	409	87	21.3
11 other institutions	432	79	18.3
Total 1961-62 (113 institutions)	9,608	1,947	20.3
Total 1957-58 (69 institutions)	5,891	1,099	18.7
<u>Non-university education</u>			
36 teacher training colleges 1961	1,009	269	26.7
18 teacher training colleges 1957	626	149	23.8
95 higher technical schools 1961	1,907	280	14.7
26 higher technical schools 1957	756	152	20.1

Source: World Survey of Education, Volume IV, UNESCO.

2. The part played by part-time teachers

Calculations made from table V in annex for table L, below, show that, in "physical" terms only the overall strength of staff changed very little during the decade 1957-66. Nevertheless, within the different types of institutions, and according to the level of staff, contrary movements can be seen, of which the most significant are the following: a great reduction in part-time "auxiliary" staff (especially assistants) in the two-year post-secondary schools (revealing thereby an improvement in their staff); a reduction in this same category in colleges and faculties; a growth in the number of part-time teachers in colleges.

Table L

Percentage of part-time teachers in higher education
for the beginning and end of the decade
1957-1966

(in "physical" terms)

	Faculties	Colleges	Post-secondary schools	Total
Teachers 1957	45 (29) ^(a)	40	57	39
	1966	28	55	38
Auxiliary staff 1957	26	25 (53) ^(a)	89	29
	1966	23	49	28

Source: Table V in annex.

Note: (a) The percentage between brackets for 1958 appears better from the statistical point of view than that for 1957.

3. Part played by lecturers

During a period of teacher shortage in 1960, the posts of lecturer and senior lecturer were created to facilitate the application of the Higher Education Reform Act. The criteria for enrolment vary considerably from one faculty or college to another. It seems to have been accepted that in future no more teachers will be recruited in this category and that, taking account of their works and their academic attainment, higher posts will be offered to those still in office pursuant to this Act.

V. Conclusions

To sum up, it may be said that in university-type institutions the student/teacher ratio seems to have improved between 1938 and 1966 and between 1960 and 1966. This fact is clearly shown in both overall and in individual fields of study, except for the humanities and the social sciences between 1938 and 1950, and in teacher training colleges, the fine arts and law between 1950 and 1966.

In non-university higher education trends vary widely depending on the field of study and the period considered. Student/teacher ratios seem to have improved after the '50's in technology (1958/66), in agriculture (1960/66) and in the social sciences.

In education and medical sciences the number of teachers increased more slowly than the number of students.

The proportion of women teachers is relatively high. Except in higher technical institutions, they increased between 1957 and 1961, to reach one-fifth in the teaching body in university education and one-quarter in teacher training colleges in 1961.

The proportion (in "physical" terms) of part-time teachers in the teaching body in higher education hardly changed during the decade 1957-66. These teachers seem to have played a large part among "auxiliary" teachers with the first period of expansion of two-year post-secondary schools.

Table II

STUDENT ENROLMENTS IN UNIVERSITY INSTITUTIONS
(Absolute Figures and Indexes)

Field of Special. Year	PURE SCIENCE	PHYSIOLOGY & ARCHITECTURE	MEDICAL SCIENCES	AGRICULTURE	HUMANITIES	EDUCATION	FINE ARTS	LAW	SOCIAL SCIENCES	TOTAL
	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES	TOTAL IN- DEXES
1938/39	2,671	2,056	1,874	2,866			228	5,598	986	16,719
1950/51	4,744	100	12,166	100	7,016	100	6,234	100	1,144	100
1951/52	3,487	86	10,343	85	8,806	87	5,382	77	8,436	94
1952/53	4,772	101	8,748	72	7,726	77	5,163	74	8,746	106
1953/54	5,169	109	9,764	80	8,829	88	4,360	62	11,095	135
1954/55	5,205	116	12,941	106	9,484	94	4,765	68	13,540	164
1955/56	5,375	113	13,728	113	9,401	93	4,345	62	13,975	170
1956/57	4,266	90	14,467	119	8,012	80	4,370	62	12,405	151
1957/58	4,139	87	16,460	135	8,946	89	6,074	87	13,420	163
1958/59	4,398	93	18,001	148	10,495	104	7,089	101	14,502	176
1959/60	4,742	96	19,456	160	10,949	110	7,955	113	14,093	171
1960/61	6,206	105	26,189	228	12,489	125	11,219	160	15,258	183
1961/62	5,259	114	29,869	246	13,590	136	10,184	145	15,860	191
1962/63	6,084	142	29,704	244	13,992	139	9,260	132	14,101	171
1963/64	7,681	162	29,585	233	13,501	134	8,399	120	13,032	158
1964/65	7,955	168	28,457	234	13,365	133	7,633	109	12,407	151
1965/66	9,171	193	31,957	263	13,923	136	7,843	112	13,705	166
1966/67	9,627	203	32,045	263	14,088	140	8,193	117	16,070	195

Source : "Uprordni Pregled Uplisanih Studenata, 1938/39 to 1964/65" (Comparative view of student enrolments, 1938/39 to 1964/65) and answers to "complementary questions".

Table III

TEACHING STAFF BY STATUS AND FIELD OF SPECIALISATION IN NON-UNIVERSITY INSTITUTIONS
 (FULL-TIME AND PART-TIME)
 (Absolute Figures and indices)

SL = Senior Level
 ML = Middle Level
 JL = Junior Level

Year	TECHNOLOGY			MEDICAL SCIENCES			AGRICULTURE			EDUCATION			SOCIAL SCIENCES			TOTAL					
	SL+ ML	JL	T	IND P	SL+ ML	JL	T	IND P	SL+ ML	JL	T	IND P	SL+ ML	JL	T	IND P	SL+ ML	JL	T	IND P	
1938/39																					
1939/51		65	12	77	100				237	13	250	100	61	3	64	100	363	28	351	100	
1951/52		31	-	31	40				356	17	373	149	53	-	53	83	440	17	457	117	
1952/53		7	-	7	9				403	22	425	170	34	-	34	53	444	22	466	119	
1953/54		38	7	45	56				433	19	452	181	38	-	38	59	509	26	535	137	
1954/55		57	18	75	97				495	20	515	206	46	-	46	72	598	38	636	163	
1955/56		67	18	85	110				554	14	568	227	46	-	46	72	667	35	702	180	
1956/57		89	10	99	129				548	26	574	230	128	25	153	239	765	61	826	211	
1957/58		204	70	274	356				603	23	626	250	287	83	370	578	1094	176	1270	325	
1958/59	26	9	35	100	231	72	303	394		632	47	679	272	438	151	589	920	1327	279	1606	411
1959/60	68	5	73	209	35	109	194	252		629	50	679	272	507	125	640	1000	1289	297	1586	406
1960/61	210	79	289	826	109	53	162	210	75	5	80	100	707	36	743	297	676	191	867	1355	1777
1961/62	437	186	623	1780	92	47	139	181	175	22	197	246	89*	115	1009	404	823	125	948	1481	2421
1962/63	592	214	86	2303	118	41	159	206	169	45	214	268	979	125	1104	442	908	107	1015	1586	2766
1963/64	647	324	971	2774	118	91	209	271	167	41	208	260	957	201	1158	463	889	148	1037	1620	2776
1964/65	836	308	1144	3269	129	82	211	274	188	32	220	275	1995	175	1270	508	817	160	977	1526	3065
1965/66	884	306	1190	3400	153	89	252	327	188	30	218	272	1104	217	1321	528	801	102	903	1411	3140
1966/67	901	292	1155	3409	153	86	249	323	178	28	206	257	1131	211	1342	537	836	92	926	1450	3209
																			709	3918	
																				1002	

Source : "Statisticki godisnjacki Jugoslovenski
 Answers to supplementary questions".

Table IV - Absolute figures & Indexes

Student enrolments in non-university institutions

Field of spe- cialisation	Year	Technology		Medical science		Agriculture		Education		Social sciences		Total	
		Total	Indexes	Total	Indexes	Total	Indexes	Total	Indexes	Total	Indexes	Total	Indexes
	1938/39					259				259			
	1950/51					4,762		100	258	100	5,340		100
	1951/52	320	100	5,638	118	118	177	69	5,947	111			
	1952/53	132	41	5,303	111	111	34	13	5,435	102			
	1953/54	17	5	4,512	96	96	58	20	4,751	89			
	1954/55	31	10	6,711	141	141	106	41	7,122	133			
	1955/56	179	68	7,124	150	147	57	57	7,605	142			
	1956/57	228	86	8,220	173	173	457	457	9,994	187			
	1957/58	461	144	8,054	169	169	1,227	1,227	12,098	227			
	1958/59	639	200	8,895	187	5,715	2,215	2,215	16,145	302			
	1959/60	100	901	9,725	204	7,824	3,033	3,033	19,286	361			
	1960/61	1,118	619	100	9,894	208	15,536	6,022	32,193	603			
	1961/62	4,852	765	1,243	153	13,164	276	18,282	7,086	40,898	766		
	1962/63	6,801	1,072	1,896	153	149	357	20,591	7,981	47,782	895		
	1963/64	7,292	1,150	1,851	149	17,007	415	22,312	8,648	53,381	1,000		
	1964/65	8,384	1,322	327	1,961	158	20,181	424	28,507	11,049	63,073	1,181	
	1965/66	11,291	1,780	1,459	456	1,635	515	28,081	10,884	68,650	1,286		
	1966/67	12,578	1,983	1,990	622	1,487	594	29,804	11,552	75,344	1,411		
		13,464	2,123	1,993	623	1,786							

Source: See table II.

Table V

EVOLUTION OF STUDENT ENROLMENTS AND NUMBER OF TEACHERS FROM 1957/58 TO 1966/67 IN THE DIFFERENT TYPES
OF INSTITUTIONS OF HIGHER EDUCATION
(Absolute Figures and Indexes)

Number of institutions	Students						Teaching staff						Auxiliary Staff		
	Total			Part-time			Teachers			Total			of which Full-time		
	Abs. fig.	Indexes	Abs. fig.	Indexes	Abs. fig.	Indexes	Abs. fig.	Indexes	Abs. fig.	Indexes	Abs. fig.	Indexes	Abs. fig.	Abs. fig.	% of total
FACULTIES															
1957/58	54	100	69,087	100	60,465	100	8,622	100	2,338	100	1,292	55	3,215	100	2,391
1958/59	55	101.8	78,904	114	66,905	110	11,999	139	2,216	97	1,637	71	3,585	111	2,611
1959/60	59	109.2	82,927	120	69,489	114	11,418	156	2,515	108	1,790	71	3,862	120	2,866
1960/61	78	144.8	104,875	152	76,462	126	28,413	320	2,886	123	2,921	72	4,665	145	3,219
1961/62	88	112,005	162,9	162,9	81,321	134	30,684	359	3,666	156	2,620	71	5,052	157	3,707
1962/63	92	174,1	106,225	153	80,764	133	20,451	295	4,512	184	2,981	69	5,150	160	3,753
1963/64	92	170,3	99,056	143	76,292	126	22,744	264	4,725	202	3,196	68	5,460	170	3,887
1964/65	93	172,2	98,631	143	75,653	125	22,978	265	5,036	215	3,385	67	5,553	170	3,953
1965/66	96	177,7	107,329	161	84,891	144	22,438	260	5,077	217	3,552	70	5,462	170	4,092
1966/67	97	179,6	111,232	161	90,675	148	20,557	238	5,161	220	3,731	72	5,367	167	4,121
COLLEGES															
1957/58	1	100	303	100	291	100	12	100	15	100	9	60	32	100	24
1958/59	2	200	464	153	454	156	10	83	17	113	8	60	30	188	28
1959/60	7	700	1,161	384	1,079	370	82	683	81	540	30	72	37	225	75
1960/61	10	1,000	2,088	689	1,710	587	1,378	3,150	156	1,040	74	114	47	31	43
1961/62	14	1,400	2,461	1,442	2,456	844	1,005	3,375	273	1,820	124	45	45	55	48
1962/63	16	1,600	4,268	1,409	2,546	875	1,222	1,833	323	1,123	153	47	47	497	86
1963/64	17	1,700	6,177	2,038	3,585	1,255	2,922	21,600	441	2,940	207	47	260	812	92
1964/65	17	1,700	6,815	2,249	3,552	1,220	2,263	27,100	488	3,253	230	47	284	887	130
1965/66	16	1,600	6,930	2,187	3,460	1,182	3,470	28,100	515	3,423	263	47	346	1,081	158
1966/67	16	1,600	6,848	2,260	4,014	1,378	2,834	25,626	474	3,160	259	51	322	1,006	174
POST-SECONDARY SCHOOLS (TWO YEARS)															
1957/58	44	100	12,098	100	8,764	100	3,354	100	1,094	100	1,094	100	467	43	176
1958/59	54	122	16,145	133	12,032	137	5,915	116	1,327	121	1,327	121	526	40	279
1959/60	66	150	19,285	159	15,179	174	7,254	217	1,289	118	1,289	118	585	45	158
1960/61	105	240	32,193	265	20,898	235	17,872	204	17,014	510	17,777	162	734	41	168
1961/62	131	298	40,898	40	32,193	295	21,374	244	23,026	754	2,421	221	1,038	43	264
1962/63	139	315	47,782	315	31,573	381	24,808	283	26,408	800	2,766	253	1,181	43	495
1963/64	137	315	52,073	63,073	52,073	442	25,849	295	37,573	860	2,778	254	1,187	43	532
1964/65	139	318	58,650	56,577	51,567	52,073	31,552	360	37,087	1,117	3,165	44	1,343	44	457
1965/66	140	318	75,344	631	36,116	412	39,228	1,117	3,209	287	1,388	44	744	44	273
1966/67	140	318	75,344	631	36,116	412	39,228	1,117	3,209	293	1,443	45	703	402	300
ALL HIGHER EDUCATION															
1957/58	110	100	82,882	100	70,954	100	12,028	100	3,735	100	2,264	61	3,489	100	2,482
1958/59	122	110.9	96,890	117	78,917	111	17,799	147	3,931	105	2,352	60	3,985	114	2,721
1959/60	143	120	104,786	126	83,935	118	20,793	172	4,160	111	2,603	63	4,324	124	3,002
1960/61	204	185.4	140,574	170	94,760	133	45,814	380	5,123	137	3,101	61	5,232	150	3,391
1961/62	244	221.8	158,010	190	103,261	145	54,749	455	6,677	178	3,987	60	5,801	166	3,778
1962/63	260	236.3	160,092	193	106,452	150	53,553	445	7,736	207	4,547	59	6,054	172	4,260
1963/64	260	236.3	160,595	193	106,625	150	53,169	446	7,828	220	4,828	58	6,694	194	4,538
1964/65	263	239.0	170,499	205	106,959	150	63,540	528	8,979	244	5,212	60	6,770	194	4,544
1965/66	266	241.8	184,923	223	121,824	171	63,099	522	9,133	244	5,467	62	6,627	194	4,627
1966/67	267	242.7	195,454	235	132,679	187	62,775	521	9,246	267	5,701	62	6,469	185	4,636

Source : Innovation in Higher Education : Reforms in Yugoslavia, Paris, 1970.

PART II

General conclusions - A comparative study of
trends in numbers of university teachers
and students in OECD Member countries

FOREWORD

By combining the data from the individual country studies that constitute the first part of this survey, it has been possible to summarise in approximate terms the trends in numbers of teachers and students in higher education in OECD Member countries. Owing, however, to the fact that certain data were either lacking or incompatible, it was necessary to limit the field of the survey to university education. In the few countries mentioned below where no distinction was made between university and non-university type education, the figures quoted in tables I, II and III of annex I concern higher education as a whole. They have been included as additional information.

Similarly, the survey has been confined to the main fields of study (1), namely those in which enrolments are highest and the trend is most significant. They are:

Pure science
Technology
Medical sciences
Humanities
Law
Social sciences

Student enrolments in the other fields of study are nevertheless quoted for reference in the tables annexed. They have been counted in total student enrolments for university education in each country (or, where no such distinction is possible, in total enrolments in higher education) and in certain sub-totals, when two fields of study cannot be broken down and analysed separately (e.g. technology and architecture or medical sciences and veterinary science). Lastly, it was decided not to review certain specific components of the total teaching strength because the relevant figures, in that they came from different sources or covered different periods, were not readily comparable. This applies particularly to the proportion of women or part-time teachers in the aggregate teaching strength, overtime, etc.

The differences between countries in the procedure used for compiling statistics and the various teaching duties discharged by teachers of different status are such that it seemed pointless, or even perhaps misleading, to present a statement of "student/teacher" ratios for any given year in the composite survey, as was done in the country studies. The object of analysis has therefore been the trends and tendencies in the university teaching body as a whole and in a few major fields of learning.

(1) See definition annexed to General Introduction.

Accordingly, the review that follows is in two parts:

- I. Average annual growth rates in numbers of teachers and students in university type institutions during the period 1950 to 1965.
- II. Structural changes in the university teaching body between 1950 and 1965.

I. Average annual growth rates between 1950 and 1965 in numbers of teachers and students, overall and by main fields of study

It was possible to identify university type establishments proper in the following countries:

Austria	Japan
Belgium	Netherlands
Canada	Norway
Denmark	Spain
France	Switzerland
Germany	Turkey
Greece	United Kingdom
Ireland	United States
Italy	Yugoslavia

For Portugal and Sweden, only figures for higher education as a whole are available, and in Italy all higher education is deemed to be of university type.

In annex I, table I gives the numbers of teachers and student enrolments by field of study and by teacher (1). This has made it possible to calculate the average annual rates of increase or decrease in these numbers between 1950 and 1965, as quoted in table II of annex I.

1. Overall trend in numbers of teachers and students in university education

a) The teaching and student bodies as a whole

From the figures quoted in table II of annex I it is possible to distinguish those countries in which the increase in teachers was more rapid than in students from those in which the reverse was the case.

However, the difference between the teacher and student growth rates varies from country to country, with the result that in the tables which follow three types of trends have been identified. For the first type, the net difference between the average annual growth rates of enrolments and of the teaching body is at least one per cent in favour of teachers. For the second type, the net difference between the two average annual growth rates is between + 1 per cent and - 1 per cent. For the third the number of students has grown by more than one per cent per year more rapidly than that of teachers, and the negative difference between the growth rate for teachers and that for students is more than - 1 per cent. The countries in which the difference is over + 1 per cent in favour of teachers are designated by the sign +; those in which it is over - 1 per cent by the sign -; and the remaining countries by the sign o.

(1) Except in Germany for 1952, where there were no figures for teachers in West Berlin by field of learning.

Table A

Trend in number of teachers in relation to enrolments for university education as a whole, by countries and by periods (a)

	I 1950-55	II 1955-60	III 1960-65	IV 1955-65
Germany (II 1952-60) (IV 1952-66)		-	+	o
Austria		-	+	-
Belgium		+	-	-
Canada (II 1956-60) (III 1960-67) (IV 1956-67)		o	o	o
Denmark	+	o	+	+
Spain (I 1951-55) (II 1955-59)	+	o	o	
United States		o	-	o
France (IV 1957-65)			+	+
Ireland (III 1960-64)	+	-	+	o
Italy (IV 1955-64)	+	+	-	o
Japan	+	o	-	-
Norway (II 1956-60) (IV 1956-65)		-	-	-
United Kingdom:				
Great Britain (III 1960-64) (IV 1955-64)		o	+	o
Northern Ireland (I 1951-55) (III and IV as for Great Britain)	+	-	+	-
Turkey	-	-	+	o
Yugoslavia	-	o	+	+

Note: (a) + : > + 1%

- : < - 1%

o : - 1% > 0 < + 1%

The overall trend by country and period is shown in table A.

Furthermore, it should be noted that in Portugal the aggregate teaching strength in higher education as a whole declined steadily over the period 1957 to 1965 (- 2.7 per cent).

b) Trend in number of teachers by level in relation to enrolments

The purpose of table B, which covers all those countries in which university teachers can be classified according to the three levels identified for this survey, is to determine the differences between the average annual growth rates for each level and for enrolments. However, in order to keep the survey within reasonable proportions, only the period 1955-1965 was considered. The same criteria of differentiation as those used in table A (+, o, -) were adopted.

Table B reveals trends that vary according to level from country to country. However,

in no country did the number of senior level teachers, where these could be differentiated from the other teachers, rise more rapidly than that of students. In regard to middle and junior level teachers, on the other hand, the trend is seen to be divergent. However, in terms of sheer numbers, it is less satisfactory for middle level than for junior level teachers.

Table B

Trend in number of teachers by level in relation to enrolments for university education as a whole between 1955 and 1965 (a)

Country	SL	ML	JL
Germany (1952-60) (b)	-	o	+
Austria	-	-	-
Belgium	-	+	+
Canada (1956-67)	-	+	-
Denmark	-	-	+
France (1957-65)	-	+	+
Greece	-	-	
Italy	-	-	o
Japan	o	o	-
Norway (1955-65)	-	-	-
United Kingdom:			
Great Britain (1955-64)	-	o	o
Northern Ireland (1955-64)	-	o	o
United States	-	-	o
Switzerland	-	-	
Yugoslavia (c)	+	-	o

Notes: (a) + : > + 1%

- : < - 1%

o = -1% > o < + 1%

(b) West Berlin included throughout.

(c) In the United States and Yugoslavia, statistics concerning senior and middle level teachers are always combined.

2. Trend in number of teachers and students by major fields of study in university education

- PURE SCIENCE

(a) The teaching and student bodies as a whole

Table C was constructed on the same criteria of differentiation as those used previously.

This table shows that there was a very general decrease in numbers of teachers between 1955 and 1960 in those countries for which figures were available and an improvement between 1960 and 1965 in three countries. If the countries for which figures are available are considered as a whole, the situation appears to show a marked improvement after 1960.

Table C

Trend in number of teachers in relation
to enrolments in pure science for
university-type education
(a)

Country	I 1950-55	II 1955-60	III 1960-65	IV 1955-65
Austria (IV 1953-65)				-
Germany (III 1960-66)		(b)	+	(b)
Spain (II 1955-59) (III 1960-64)		-	-	
France (IV 1957-65)			+	+
Italy	+	o	o	o
Norway (II 1956-60) (IV 1956-65)		-	-	-
United Kingdom:				
Great Britain (III 1960-64) (IV 1955-64)		-	+	o
Northern Ireland (I 1951-55) (III 1960-64) (IV 1955-64)	+	-	+	-
Turkey	-	-	+	+
Yugoslavia	+	+	-	+

Notes: (a) + : > + 1%

- : < - 1%

o : - 1% > o < + 1%

(b) Owing to the fact that teachers in West Berlin were not included in the statistics for 1952, the average annual rates of increase in numbers of teachers by field of study taking 1952 as the base year, seem higher than they are in reality. It seemed preferable, therefore, not to attempt a comparison between Germany and other countries.

(b) Trend in number of pure science teachers by level in relation to enrolments

This trend is traced over the period 1955-65 in table D below, which shows that it is only in Austria, Yugoslavia and France that the number of certain teachers has grown faster than enrolments.

- TECHNOLOGY

(a) The teaching and student bodies as a whole

Table E below shows very marked differences between countries and even within individual countries from period to period. It should be noted, however, that in Greece and Turkey the total number of teachers has steadily declined, whereas in Northern Ireland it has continuously risen.

In technology, therefore (table F) it is quite clear that during the period 1955-1965 middle and junior level teachers made the largest contribution to the growth of the aggregate teaching strength and did most to satisfy the quantitative needs created by increased enrolments.

Table D

Trend in number of teachers by level in
relation to enrolments in pure science
at university level between 1955 and 1965 (a)

Country	Level	SL	ML	JL
Austria (1953-65)	-	-	-	+
France (1957-65)	-	+	-	+
Greece	-	-	-	
Italy	-	o	-	o
Norway (1956-65)	-	-	-	-
Switzerland (b) (1955-63)	-	-	-	
United Kingdom:				
Great Britain (1955-64)	-	o	-	o
Northern Ireland (1955-64)	-	o	-	-
Yugoslavia		-	-	o

Notes: (a) + : >+ 1%

- : < -1%

o : -1% > o < + 1%

(b) In Switzerland, the statistics for pure science, technology, architecture, agriculture (excluding veterinary science) and fine arts are combined.

Table E

Trend in number of teachers in relation
to enrolments in technology

Country	Period	I 1950-65	II 1955-60	III 1960-65	IV 1955-65
Germany (III 1960-66)				+	-
Austria (IV 1953-65)				-	
Spain (II 1955-59) (III 1960-64)			-	+	
Greece			-	-	-
Italy	+	+	o	-	+
Norway (II 1956-60) (IV 1956-65)		+	-	-	o
United Kingdom:					
Great Britain (III 1960-64) (IV 1955-64)			o	o	o
Northern Ireland (I 1951-55) (III 1960-64) (IV 1955-64)	+	+	+	-	+
Turkey	-	-	-	-	-
Yugoslavia	o	-	+	-	+

(b) Trend in number of technology teachers by level in relation to enrolments

Table F

Trend in number of teachers by level
in relation to enrolments in technology

Country \ Level	SL	ML	JL
Austria (1953-65)	-	-	-
Greece (a)	-	-	
Italy	-	+	+
Norway (1956-65)	-	+	o
Switzerland (1955-63)	(b)	(b)	
United Kingdom:			
Great Britain (1955-64)	o	o	+
Northern Ireland (1955-64)	-	+	+
Yugoslavia	+		o

Notes: (a) Including architecture.

(b) See footnote (b) to table D.

- MEDICAL SCIENCES

(a) The teaching and student bodies as a whole

Table G

Trend in number of teachers in relation to
enrolments in medical sciences, by countries
and by periods

Country	I 1950-55	II 1955-60	III 1960-65	IV 1955-65
Austria				-
France (IV 1957-65)			+	+
Germany (III 1960-65)			+	
Italy	+	+	-	+
Norway (II 1956-60) (IV 1956-65)		--	o	-
Spain (II 1955-59) (IV 1960-64)		+	-	
Turkey	+	+	-	+
United Kingdom:				
Great Britain (III 1960-64) (IV 1955-64)		+	+	+
Northern Ireland (I 1951-55) (III 1960-64) (IV 1955-64)	+	+	-	o
Yugoslavia	o	+	+	+

Whereas for pure science there are 12 pluses out of a total of 28 signs and for technology 12 out of a total of 29 signs, the tally for medical sciences is 18 out of 28. The teacher/student ratio is therefore much better in medical sciences.

(b) Trend in number of teachers in medicine by level in relation to enrolments

Table H

Trend in number of teachers by level
in relation to enrolments in medical
sciences between 1955 and 1965

Country	Level	SL	ML	JL
Austria		-	-	-
France (1957-65)		-	+	+
Greece		-	-	
Italy		+	+	+
Norway (1956-65)		o	-	o
United Kingdom:				
Great Britain (1955-64)		+	+	+
Northern Ireland (1955-64)		+	+	-
Switzerland (1955-63) (a)		-	-	
Yugoslavia			+	+

(a) Including veterinary science.

Table H concerning medical sciences also confirms some special features in the trend of teaching strength. Of the nine countries covered, four recorded a proportionally sharper increase in the number of senior teachers than in that of student enrolments. Furthermore, table II of annex I shows that in a number of countries enrolments in medical sciences grew more slowly than aggregate enrolments, a factor which of course contributed to the trend noted above.

- HUMANITIES

(a) The teaching and student bodies as a whole

Table I

Trend in number of teachers in relation
to enrolments in the humanities

Country	Period	I 1950-55	II 1955-60	III 1960-65	IV 1955-65
Austria					-
France (IV 1957-65) (a)				+	+
Germany (III 1960-66)				o	
Italy		+	o	-	-
Norway (II 1956-60) (IV 1956-65)			-	-	-
Spain (II 1955-59) (IV 1956-64)			-	-	-
Turkey		o	-	-	-
United Kingdom:					
Great Britain (b) (II 1955-58) (III 1959-64)			-	o	
Northern Ireland (I 1951-55) (III 1960-64) (IV 1955-64)		+	-	-	-
Yugoslavia		-	+	+	+

(a) Including behavioral and social sciences. (b) Including law and architecture.

The overall picture that emerges for the period 1955-65 from the above table is a fairly negative one. Only France and Yugoslavia managed to increase their teaching strength, even though in France the position was particularly bad initially.

(b) Trend in number of teachers by level in relation to enrolments

Table J

Trend in number of teachers by level in relation
to enrolments in the humanities 1955 - 1965

Country	Level	SL	ML	JL
Austria		-	-	o
France (1957-65) (a)		-	+	+
Greece		-	+	
Italy		-	-	-
Norway (1956-65)		-	-	-
Switzerland (1955-63) (b)		-	-	
United Kingdom:				
Northern Ireland (1955-65)		-	-	
Yugoslavia		+		+

Notes: (a) Including behavioral and social sciences.

(b) Including education.

Table J serves to underscore the impression conveyed by table I. In France, therefore, the fact that the overall position emerges as positive is solely due to junior level teachers.

— LAW

(a) The teaching and student bodies as a whole

Table K

Trend in number of teachers in relation to enrolments in law

Notes: (a) Including economics.

(b) Law is included in humanities (see table I).

Table K likewise reveals widely differing trends as between countries and periods.

(b) Trend in number of teachers by level in relation to enrolments

Table L

Trend in number of teachers by level in relation to enrolments

Country	Level	SL	ML	JL
Austria		-	-	+
France (1957-65) (a)		-	o	+
Greece		-	-	+
Italy		+	+	+
Norway (1956-65)		-	-	-
Switzerland (1955-63) (b)		-	-	-
United Kingdom:				
Northern Ireland (1955-65)		-	-	-
Yugoslavia		o		-

Notes: (a) Including law and economics.

(b) Including law and social sciences.

Table L brings out the generally faster increase in junior teachers

- SOCIAL SCIENCES

(a) The teaching and student bodies as a whole

In many countries and over several periods the increase in the number of teachers did not keep pace with the increase in enrolments. The period from 1960 to 1965 showed something of an improvement over the previous five years (table M).

Table M

Trend in number of teachers in relation to enrolments in social sciences

Note: (a) See humanities (and behavioral and social sciences): table I.

(b) Trend in number of social science teachers by level in relation to enrolments

Table N

Trend in number of teachers by level in
relation to enrolments in social sciences

Country	Level	SL	ML	JL
Austria		-	-	o
Greece		-	+	
Italy		-	-	-
Norway (1956-65)		-	-	+
Switzerland (a)				
United Kingdom:				
Northern Ireland (1955-64)		-	-	o
Yugoslavia		+>		+

Note: (a) Included in law (see table L).

Here again, (table N), junior level teachers generally showed the most rapid growth rate.

II. Structural changes in the university teaching body between 1950 and 1965

The figures in table III of annex I show a decline in the proportion of senior university teachers in every country (other than Spain) in which the different levels can be separately identified.

The proportion of the total teaching strength represented by middle level teachers grew in Canada, Greece, Spain and the United Kingdom. It also increased in the Netherlands and Switzerland, and probably in Yugoslavia too, but because they use a different procedure for the presentation of statistics, these three countries cannot usefully be compared with the others.

The number of junior level teachers rose more than proportionately in many cases. The proportion of this level to the total number of teachers increased between 1950 or 1955 and 1965 in all the countries under review except Canada, Spain, the United Kingdom and Yugoslavia.

Furthermore, table III of annex I reveals substantially varying proportions of teachers at the different levels according to the country concerned. It has already been pointed out in the foreword that the criteria used to distinguish between senior, middle and junior level teachers were not exactly the same for all countries, but that the apparent differences were probably more formal than real. It may therefore come as something of a surprise to find certain differences between countries regarding the same group of teachers considered in the aggregate and by individual fields of study. Thus, in 1965 senior level teachers accounted for some 30 per cent of the total teaching strength in Belgium but barely 10 per cent in Denmark. Also, in a given field the proportion of assistants and other teachers of the same status sometimes varies considerably as between countries or years. In technology, for example, this proportion was 73 per cent in Italy as against 16 per cent in Great Britain in 1965. Similar differences may be found in table III of annex I for nearly every field of study.

Better than a necessarily lengthy comment on the trend of each level of teachers by field of study and by country, the summary tables O, P and Q should afford a composite picture of these trends in the six Member countries for which statistics are comparable.

Table O

Countries and fields of study in which the proportion of senior level teachers rose between 1955 and 1965

Country	Field of study	Pure science	Techno- logy	Medical sciences	Humanities	Law	Social sciences
Austria							
France (1957-65)							
Germany (1957-65)							
Italy				x			
Norway (1956-65)				x			
United Kingdom:				x			
Great Britain (1955-64)				x			
Northern Ireland (1955-64)		x		x		x	

Table P

Countries and fields of study in which the proportion of medium level teachers rose between 1955 and 1965

Country	Field of study	Pure science	Techno- logy	Medical sciences	Humanities	Law	Social sciences
Austria				x			
France (1957-65)				x			
Germany (1952-66)				x			
Italy			x		x		
Norway (1956-65)				x	x		
United Kingdom:				x	x		
Great Britain (1955-64)		x		x	x	(x) (a)	
Northern Ireland (1955-64)		x	x	x	x	x (a)	

Note: (a) Included in humanities.

Table Q

Countries and fields of study in which the proportion of teachers of junior status rose between 1955 and 1965

Country \ Field of study	Pure science	Techno-logy	Medical sciences	Humanities	Law	Social sciences
Austria		x	x	x	x	x
France (1957-65)	x		x	x	x	x (a)
Germany (1952-64)	x	x		x	x	x
Italy	x	x	x	x	x	x
Norway (1956-65)	x	x	x	x	x	x
United Kingdom:						
Great Britain (1954-64)	x	x		x	x (a)	x (b)
Northern Ireland (1954-64)		x		x	x (a)	x

Notes: (a) Included in humanities.
(b) 1960-64 only.

Conclusions

Owing to the limited range of the foregoing survey, the most that can be attempted is to draw certain indicative and summary conclusions, as follows:

1. There has been a much more than proportional increase in the number of junior university teachers in many countries, as shown in the individual country studies in Part I of this paper and also in the broader international context, as shown by the tentative inter-country comparison that forms Part II;
2. Conversely, there has been a virtually all-round decrease in the number of senior university teachers in countries where these could be identified as a separate group;
3. There is a very great disparity in trends between countries and often between different fields of study within the same country; generally speaking, the trends are more favourable in medicine, whereas in the humanities and social sciences there is often seen to be a decline in the teaching strength;
4. Despite the very rapid rise in enrolments, three countries out of fifteen managed to increase their teaching strength between 1955 and 1965, while seven others kept it virtually stable during the same period.

Full-time and Part-time
Pupil taught at temps partiel

	Total			Pure Science / Sciences pures			Architecture			Technology / Techniques			Medical Sciences - Sciences Méd.							
	Teaching Staff Enseignants			Stud. Etudiants			Teaching Staff Enseignants			Stud. Etudiants			Teaching Staff Enseignants			Stud. Etudiants				
	S.L. S.G.	N.R. N.V.	J.L. J.V.	S.L. S.G.	N.R. N.V.	J.L. J.V.	S.L. S.G.	N.R. N.V.	J.L. J.V.	S.L. S.G.	N.R. N.V.	J.L. J.V.	S.L. S.G.	N.R. N.V.	J.L. J.V.	S.L. S.G.	N.R. N.V.	J.L. J.V.		
ALLEMAGNE GERMANY	1952	2 760	1 243	4 501	11 505	112 390	1 476	726	770	2 052	16 407	59	19	76	184	5 775	233	339	526	1 121
	1955	3 251	6 413	7 000	17 465	209 450 (S)	718	1 164	1 400	3 451	30 127	81	30	118	269	4 982	401	742	540	1 031
	1956	4 663	8 307	13 482	26 554	256 426 (C)	2 004	2 397	5 061	40 559	109	150	264	343	5 822	501	803	1 237	2 223	
AUTRICHE AUSTRIA	1952	482	1 196	537	2 166	15 271	27	72	44	123	534	29	72	37	118	1 365	40	80	111	1 011
	1955	517	1 251	1 257	2 171	15 271	1 201	533	533	1 201	534	1 201	122	333	1 201	1 679	112	243	241	1 210
	1956	534	1 275	1 459	2 345	43 895	19	82	193	325	2 066	38	71	147	256	1 209	112	352	241	1 211
BELGIQUE BELGIUM	1951	855	731	1 451	2 040	21 067										10 068	404	943	1 041	1 241
	1952	1 061	1 048	1 142	1 225	28 101										12 617	511	1 022	2 107	1 252
	1955	1 442	1 705	2 076	5 227	46 261										1 679	12 382	241	241	1 210
CANADA	1950																			
(r) (e) (h)	1956	1 179	2 775	1 045	7 200	78 204														
	1957	1 443	4 504	1 611	9 735	111 264														
DANEMARK DENMARK	1950	284	211	465	1 005	13 027														
	1955	121	231	402	1 020	17 110														
	1956	191	138	1 484	2 028	19 141														
	1957	104	171	1 376	3 778	37 341														
ESPAGNE SPAIN	1950	817	826	3 268	4 050	36 425														
	1955	1 149	1 740	1 411	6 313	40 892	131	271	443	246	7 103	36	3	36	70	543	214	232	173	1 212
	1956	1 101	1 740	1 411	6 313	40 892	131	271	443	246	7 103	31	30	46	109	530	214	232	173	1 212
	1957	1 205	2 076	2 439	5 765	179 650	175	438	595	610	19 312	14	110	294	411	5 820	219	252	1 250	1 252
ESTADOS UNIDOS UNITED STATES	1952	10 707	10 186	26 926	45 000	927 000														
(e) (n)	1960	253 500	253 500	25 000	250 000	1 462 000														
FRANCIA FRANCE	1950																			
	1955	1 556	1 101	2 195	5 118	175 889	191	500	928	1 631	51 177	36	3	36	70	543	214	232	173	1 212
	1956	1 721	1 842	4 116	7 901	203 375	391	472	2 324	2 612	51 177	36	3	36	70	543	214	232	173	1 212
	1957	2 211	3 130	13 120	15 121	193 650	470	1 724	6 375	8 000	121 519	36	3	36	70	543	214	232	173	1 212
GRECIA GREECE	1950	440	222	457	457	457	91	19	60	119						111	116	111	1 072	
	1955	444	491	205	232	50	24	60	60	60						66	104	1 300	1 200	
	1956	469	414	209	267	51	37	61	70	70						97	16	2 340	1 200	
IRLANDA IRELAND	1950	153	171	664	7 323	17 105										83	2	65	4 566	
	1955	109	176	670	8 109	17 105										77	10	375	312	
	1956	212	667	8 109	17 105	17 105										100	10	375	312	
	1957	111	171	664	7 323	17 105										111	116	111	1 212	
ITALIA ITALY	1950	1 744	2 332	10 029	14 245	287 239	235	61	1 051	1 263	21 158	30	164	274	468	1 606	172	240	1 351	2 076
	1955	1 447	2 211	13 117	26 563	270 931	109	1 203	2 125	3 622	25 162	31	170	151	460	1 102	174	155	1 267	
	1956	2 283	4 259	24 302	30 306	246 102	151	1 203	2 125	3 622	16 742	49	153	1 046	1 247	6 058	200	275	1 272	2 076
JAPON JAPAN	1950	5 647	11 056	21 227	27 227	125 614										5 902	-	29 775	(x)	
	1955	10 105	21 307	25 037	25 037	201 765										9 908	-	29 775	(x)	
	1956	11 466	21 932	15 581	41 027	121 108										18 073	-	14 058	(x)	
	1957	21 307	21 487	16 577	27 577	177 507										13 556	-	14 058	(x)	
	1958	21 227	21 932	15 581	41 027	177 507										10 463	-	11 910	(x)	
PORTUGAL PORTUGAL	1957															61	63	220	1 392	54
	1958															77	21	224	116	54
PATRIMONIO NEDERLAND	1950	757	162	1 189	29 716	112 104										31	31	144	9 615	94
	1955	917	562	1 439	29 716	112 104										113	31	144	9 615	94
	1956	1 073	572	1 645	35 131	172										102	88	290	9 662	125
SUICELTA PORTUGAL	1957															4	4	5	10	112
	1958															2	2	22	25	107
SUZER SWITZERLAND	1950	8 293	7 307	5 356	71 016											10 356	291	101	724	1 276
	1955	914	656	612	1 602	109	264	513	513	513	513	513	513	513	513	336	16	634	1 018	411
	1956	971	761	1 757	15 940	128	237	523	523	523	523	523	523	523	523	336	16	634	1 018	411
	1957	1 010	1 010	1 010	1 010	1 010	203	583	670	670	670	670	670	670	670	336	16	634	1 018	411
	1958	1 100	936	2 010	27 751	412	275	581	581	581	581	581	581	581	581	10 356	291	101	724	1 276
TURQUIA TURKEY	1950															1 842	23 414			
	1955															206	375			
	1960															221	3 375			
	1965															57	435			
															271	570				
															63	570				
															109	724				
YUGOSLAVIA YUGOSLAVIA	1950:	26 171	26 171	26 171	26 171	26 171	134	147	283	4 444						661	693	1 314 (O)	12 166 (O)	112
	1955	26 171	26 171	26 171	26 171	26 171	165	145	411	5 373						632	810	1 462 (O)	13 730 (O)	112
	1960	26 171	26 171	26 171	26 171	26 171	203	161	556	6 206						687	1 297	2 127	2 127	112
	1965	26 171	26 171	26 171	26 171	26 171	427	414	541	9 171						1 172	1 797	2 127	2 127	112

General remarks : Figures in parentheses refer to all higher education.

(a) Refers to university education and some institutions of non-university type education.

Note : 1. For the distribution by field of specialization and status, see the corresponding monograph. However, in general, the distinction has been made between:
 - Full or extraordinary professors (those holding chairs and those not holding chairs), *meritaires* and honorary professors;
 - J.L. Assistants and other regular staff; *salaries de cours/enseignement*, etc.

(b) This is not the student-teachers in West Berlin ; the teaching staff includes West Berlin only in the total ; this explains why the total is not the same as the figure given in the monograph.

(c) Does not include the student-teachers in the Teacher Training Institutes nor teachers in the "Realschule" or vocational schools.

(d) Includes included in the figure given in the monograph.

(e) Figures for teacher numbers only for the year 1955.

(f) Includes figures for the year 1955.

(g) Includes figures for the year 1955.

(h) Includes figures for the year 1955.

(i) Includes figures for the year 1955.

(j) Includes figures for the year 1955.

(k) Includes figures for the year 1955.

(l) Includes figures for the year 1955.

(m) Includes figures for the year 1955.

(n) Includes figures for the year 1955.

(o) Includes figures for the year 1955.

(p) Includes figures for the year 1955.

(q) Includes figures for the year 1955.

(r) Includes figures for the year 1955.

(s) Includes figures for the year 1955.

(t) Includes figures for the year 1955.

(u) Includes figures for the year 1955.

(v) Includes figures for the year 1955.

(w) Includes figures for the year 1955.

(x) Includes figures for the year 1955.

(y

TABLE II : ANNUAL RATE OF GROWTH OF TEACHING
ETUDES
TABLEAU II : TAUX ANNUEL MOYEN D'ACCROISSEMENT
ET BRAN

	TOTAL					Pure Science / Sciences pures					Architecture					Technology / Technologie					Medical Science/Sciences de la Santé											
	Teaching Staff Enseignants					Stud. Etud.	Teaching Staff Enseignants					Stud. Etud.	Teaching Staff Enseignants					Stud. Etud.	Teaching Staff Enseignants					Stud. Etud.	Teaching Staff Enseignants							
	SL/SS	ML/SM	JL/SI	T	SL/SS	ML/SM	JL/SI	T	SL/SS	ML/SM	JL/SI		T	SL/SS	ML/SM	JL/SI	T	SL/SS	ML/SM	JL/SI	T											
ALLEMAGNE ^a GERMANY	1952-50 (b)	3.2	6.1	5.7	5.3	7.8	5.0	7.1	7.7	6.9	7.5	5.0	4.6	7.7	5.8	1.5	5.9	10.3	7.5	8.1	7.8	2.5	9.2	7.7	5.8	1.0	5.1	6.2	5.1	2.1		
	1950-56	4.1	3.9	11.6	7.3	5.4	5.1	6.4	13.4	9.4	9.5	4.2	13.2	12.8	9.2	1.1	3.8	11.6	7.1	-	0.8	3.4	7.1	5.1	1.1	5.9	5.9	5.9	2.1			
	1952-60 (b)	3.8	4.9	8.2	6.4	5.9	4.8	6.4	9.4	7.4	6.0	4.2	7.7	9.2	7.5	2.7	4.6	9.9	8.7	7.1	3.7	3.4	7.1	5.1	1.1	5.9	5.9	5.9	2.1			
AUTRICHE AUSTRIA	1951-55	20.0	-0.1	47	16.4	11.9	-	-	-	-	13.1	-	-	-	-	10.4	-	-	-	-	19.1	17.1	-4.4	46	23							
	1955-60	-2.8	3.6	4.3	2.8	11.9	-	-	-	-	16.9	-	-	-	-	17.3	-	-	-	-	18.7											
	1960-65	3.8	6.1	9.5	7.2	4.9	-	-	-	-	4.8	-	-	-	-	4.1	-	-	-	-	10.4	3.6	9.0	17.3	8.7	-1.3	4.8	4.7	4.3	3.9		
	1965-69	0.4	4.8	6.8	4.9	9.6	4.3	1.1	13.4	7.1	2.3	(c)	(c)	(c)	(c)	10.7	(c)	(c)	(c)	(c)	10.4	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)			
BELGIQUE BELGIUM	1951-55	1.0	2.6	12.7	5.1	3.1	-	-	-	-	13.1	-	-	-	-	10.4	-	-	-	-	19.1											
	1955-60	2.8	6.2	14.6	7.4	4.6	-	-	-	-	16.9	-	-	-	-	17.3	-	-	-	-	18.7											
	1960-65	6.8	10.4	12.7	9.1	7.4	-	-	-	-	4.8	-	-	-	-	4.1	-	-	-	-	10.4	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)			
	1965-69	4.7	8.3	13.6	8.8	6.0	-	-	-	-	2.3	-	-	-	-	2.1	-	-	-	-	10.4	3.6	9.0	17.3	8.7	-1.3	4.8	4.7	4.3	3.9		
CANADA	1950-56	5.1	12.9	5.6	9.7	9.8	-	-	-	-	12.6	-	-	-	-	12.6	-	-	-	-	12.6											
	1955-62	11.9	16.5	1.8	11.4	12.6	-	-	-	-	10.4	-	-	-	-	10.4	-	-	-	-	12.6											
	1955-67	9.4	19.2	3.7	10.4	11.5	-	-	-	-	11.5	-	-	-	-	11.5	-	-	-	-	12.6											
DANEMARK DENMARK	1950-55	2.5	-1.8	7.7	4.8	-1.7	-	-	-	-	10.4	-	-	-	-	10.4	-	-	-	-	12.6											
	1955-60	1.0	-10.1	16.1	9.6	9.1	-	-	-	-	16.4	-	-	-	-	16.4	-	-	-	-	12.6											
	1960-65	5.2	14.9	21	18.4	14.0	-	-	-	-	11.6	-	-	-	-	11.6	-	-	-	-	12.6											
	1965-69	4.5	1.6	18.7	13.9	11.6	-	-	-	-	11.6	-	-	-	-	11.6	-	-	-	-	12.6											
ESPAGNE SPAIN	1951-55	3.2	7.6	2.5	3.8	2.1	-	-	-	-	4.0	7.7	0.3	1.4	14.9	2.2	50	6.3	8.7	34	2.1	25	36	27	17.3	42	16.5	2.3	1.3	13.6	11.1	
	1955-60	3.8	9.3	10.0	7.6	7.1	-	-	-	-	2.1	-	-	-	-	10.5	3.2	13.9	4.3	8.7	33	3.5	14.3	26	22	17.3	42	16.5	2.3	1.3	13.6	11.1
ESTONIA UNITED STATES	1950-55	5.0	3.1	5.9	5.6	-	-	-	-	10.4	-	-	-	-	10.4	-	-	-	-	12.6												
	1960-65	7.3	1.1	5.7	6.2	-	-	-	-	10.4	-	-	-	-	10.4	-	-	-	-	12.6												
	1965-69	6.0	-	7.0	6.8	7.5	-	-	-	-	10.4	-	-	-	-	10.4	-	-	-	-	12.6											
FRANCE	1949-57	3.6	10.6	23	11.0	3.1	6.1	-2.4	3.2	2.1	12.6	-	-	-	-	12.6	-	-	-	-	12.6											
	1950-59	3.6	10.2	22	11.8	14.1	1.3	1.2	2.0	2.0	17.2	-	-	-	-	17.2	-	-	-	-	12.6											
	1959-65	3.9	12.2	24	17.0	7.6	7.6	12.6	23	19.5	10.9	-	-	-	-	10.9	-	-	-	-	12.6											
GREECE GRIECHENLAND	1950-55	0.2	3.3	-	1.3	8.1	1.7	9.9	-	3.7	4.9	-	-	-	-	4.9	(d)	-	-	-	12.6	1.2	-	-	-	-	-	-	-	-		
	1955-60	1.9	9.7	-	1.7	12.7	0.7	6.2	-	2.6	24	-	-	-	-	24	(d)	-	-	-	12.6	4.7	-	-	-	-	-	-	-	-		
	1955-65	1.1	6.4	-	1.2	12.7	1.1	9.4	-	3.3	14.1	-	-	-	-	14.1	-	-	-	-	12.6	3.2	1.3	-	13.3	-	-	-	-			
IRLANDE IRELAND	1950-55	0.6	-	5.1	3.6	2.1	-	-	-	-	12.6	-	-	-	-	12.6	-	-	-	-	12.6											
	1955-60	1.3	2.1	2.0	4.5	2.4	-	-	-	-	12.6	-	-	-	-	12.6	-	-	-	-	12.6											
	1955-64	1.7	2.0	2.0	2.2	2.1	-	-	-	-	12.6	-	-	-	-	12.6	-	-	-	-	12.6											
	1955-68	1.7	2.8	2.7	2.7	2.7	-	-	-	-	12.6	-	-	-	-	12.6	-	-	-	-	12.6											
ITALIE ITALY	1950-55	2.2	2.7	5.3	5.1	-1.9	4.4	4.3	4.3	8.1	6.3	-0.8	5.4	0.7	5.1	3.6	4.1	0.8	3.6	5.3	4.4	-4.0	2.0	2.3	7.1	2.1	0.6	0.6	0.2			
	1955-60	0.5	2.1	2.0	2.3	2.3	4.8	1.2	8.0	8.0	6.0	1.0	5.8	1.0	5.8	3.6	4.1	0.7	3.6	5.3	4.4	-4.0	2.0	2.3	7.1	2.1	0.6	0.6	0.2			
	1960-65	2.0	2.0	2.0	2.1	2.1	8.7	6.0	5.2	10.8	8.8	0.8	8.8	3.6	8.8	7.5	10.3	0.8	8.8	5.3	4.4	-4.0	2.0	2.3	7.1	2.1	0.6	0.6	0.2			
	1965-69	3.0	3.0	2.1	2.1	2.1	6.7	4.0	6.0	7.9	7.9	1.7	7.9	8.3	7.9	11.5	8.3	4.1	8.7	5.3	4.4	-4.0	2.0	2.3	7.1	2.1	0.6	0.6	0.2			
JAPON JAPAN	1950-55	1.1	10.0	16.6	7.7	11.6	1.0	14.4	15.1	11.8	24	-	-	-	-	10.9	-	-	-	-	12.6											
	1955-60	2.6	10.6	10.8	8.3	14.6	1.5	9.2	12.1	9.3	15.3	-	-	-	-	15.3	-	-	-	-	12.6											
	1955-65	2.6	10.6	11.0	8.3	14.6	1.5	9.2	12.1	9.3	15.3	-	-	-	-	15.3	-	-	-	-	12.6											
PAKISTAN PAKISTAN	1950-55	3.9	7.6	-	5.2	-0.1	4.9	5.1	-	5.0	4.6	-	5.0	4.6	4.6	2.3	2.6	-	5.0	4.6	2.3	-	2.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3		
	1955-60	3.4	3.1	-	5.2	5.0	2.6	2.3	-	5.0	4.0	-	4.7	4.7	4.7	2.3	2.6	-	5.0	4.6	2.3	-	2.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3		
	1955-65	4.0	3.1	-	5.2	5.0	2.6	2.3	-	5.0	4.0	-	4.7	4.7	4.7	2.3	2.6	-	5.0	4.6	2.3	-	2.6	2.3	2.3	2.3	2.3	2.3	2.3	2.3		
PORTUGAL	1957-60	2.7	2.7	2.7	2.7	2.7	-	-	-	-	2.7	-	-	-	-	2.7	-	-	-	-	2.7											
	1960-65	2.7	2.7	2.7	2.7	2.7	-	-	-	-	2.7	-	-	-	-	2.7	-	-	-	-	2.7											
	1965-69	2.7	2.7	2.7	2.7	2.7	-	-	-	-	2.7	-	-	-	-	2.7	-	-	-	-	2.7											
ROYAUME-UNI UNITED KINGDOM	1950-55	2.7	6.2	-1.3	3.6	4.8	3.5	5.8	6.0	5.5	7.6	-	-	-	-	7.6	-	-	-	-	7.6											
	1955-60	2.7	4.2	-1.1	4.0	4.8	10.4	10.6	11.6	10.6	10.6	-	-	-	-</																	

TABLE II : ANNUAL RATE OF GROWTH OF TEACHING STAFF (IN STATUS) AND STUDENT ENROLMENTS BY COUNTRY AND FIELD OF SPECIALISATION BETWEEN 1950 AND 1965 IN UNIVERSITY INSTITUTIONS (a)

Notes : (a) Voir notes du tableau I.
On fait note de l'absence d'accrue des enseignements de Berlin-Ouest en 1952 dans les désaggregations par branches, mais tenu : annuels moyens d'accrueissement du nombre des enseignements dans ces deux dernières années, partiellement surévalués. Les trovées sont donc effectivement inférieures à la moyenne des accroissements dans les démarquages.

(c) Ces taux sont ceux de la période 1955-1957.
(d) Pas d'enseignants NL en 1960.

(e) 1955-1956 : voir explications tableau I.
 (f) 1959-1960 : voir explications tableau I. Les taux avant et après 1959 ne sont pas comparables du fait des modifications intervenues alors dans la composition statistique des sciences sociales, incluses jusqu'en 1954.

STUDENT ENROLMENTS BY COUNTRY AND FIELD OF SPECIALISATION
 UNIVERSITY INSTITUTIONS (a)
 TS ET D'ENSEIGNANTS (PAR STATUT) ENTRE 1950 ET 1959 PAR PAYS
 MENTS DE TYPE UNIVERSITAIRE (a)

Agriculture		Humanities / Lettres						Education						Fine Arts / Beaux Arts						Law / Droit						Social Sciences/Réosciences sociales										
		Teaching Staff Enseignants			Stud.			Teaching Staff Enseignants			Stud.			Teaching Staff Enseignants			Stud.			Teaching Staff Enseignants			Stud.			Teaching Staff Enseignants			Stud.							
		SL/SM	JL/SI	T		Stud.	SL/SS	ML/SM	JL/SI	T	Stud.	SL/SS	ML/SM	JL/SI	T	Stud.	SL/SS	ML/SM	JL/SI	T	Stud.	SL/SS	ML/SM	JL/SI	T	Stud.	SL/SS	ML/SM	JL/SI	T	Stud.					
1.0	6.8	8.1	0.3	4.0	-4.6	11.7	5.5	11.0	-13.3	1.2	-5.9	-6.0	13.6	4.3	1.1	8.6	5.0	5.6	7.6	7.9	13.1	9.4	5.2	5.2	3.1	3.1	3.1	3.1	3.1	3.1						
0.1	12.9	8.2	4.8	4.1	-0.7	15.7	5.0	14.7	50	10.8	-1.9	-6.1	-3.6	4.5	-0.8	15.7	5.6	5.1	6.1	17.4	13.8	8.1	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2						
0.2	8.7	7.6	6.8	3.6	8.7	12.9	7.7	7.5	-16.0	4.8	-4.7	-0.9	5.5	4.1	-2.3	11.2	4.9	4.8	6.6	2.4	17.4	13.8	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2					
1.8	40	12.1	-3.3	26	0.1	36	12.9	18.9	11.7	11.4	11.5	0.0	11.3	7.1	9.9	7.7	-1.3	7.8	4.3	24	-14.1	70	7.8	8.0	36	-8.9	3.1	0.0	11.9	12.2						
4.2	5.8	4.7	6.7	-0.8	5.7	11.5	6.1	11.8	11.4	11.5	0.0	11.3	7.1	9.4	7.6	0.2	1.6	12.4	4.6	0.2	4.6	0.1	1.6	2.1	4.6	0.4	1.6	4.6	0.4	1.6						
4.0	3.8	2.9	6.9	1.8	5.7	11.5	6.1	11.8	11.4	11.5	0.0	11.3	7.1	9.4	7.6	0.2	1.6	12.4	4.6	0.2	4.6	0.1	1.6	2.1	4.6	0.4	1.6	4.6	0.4	1.6						
0.2	3.5	2.6	6.5	-2.0	1.7	5.5	11.6	8.8	14.5	11.6	11.7	0.0	11.3	7.1	9.4	7.6	2.8	6.9	3.9	4.5	-1.0	40	7.1	11.2	17.9	18.8	26	14.5	14.5	14.5	14.5	14.5				
0.1	2.8	2.6	6.5	1.1	5.6	5.9	11.6	8.8	14.5	11.6	11.7	0.0	11.3	7.1	9.4	7.6	2.8	6.9	3.9	4.5	-1.0	40	7.1	11.2	17.9	18.8	26	14.5	14.5	14.5	14.5	14.5				
1.7	-	1.1	1.1	1.1	2.2	1.1	6.6	5.0	7.5	3.3	11.1	25	12.6	11.1	11.1	11.1	36	15.5	22	11.1	8.0	36	-8.9	3.1	0.0	11.9	12.2	31	31	31	31	31	31			
1.2	-	1.1	1.1	1.1	3.3	11.1	20	12.5	16.4	11.1	11.1	27	11.1	11.1	11.1	11.1	36	14.0	26	14.0	8.0	36	-8.9	3.1	0.0	11.9	12.2	31	31	31	31	31	31			
1.0	-	1.1	1.1	1.1	3.3	11.1	27	11.1	13.0	11.1	11.1	27	11.1	11.1	11.1	11.1	36	14.0	26	14.0	8.0	36	-8.9	3.1	0.0	11.9	12.2	31	31	31	31	31	31			
0.2	-	1.1	1.1	1.1	2.2	1.1	6.6	5.0	7.5	3.3	11.1	25	12.6	11.1	11.1	11.1	36	15.5	22	11.1	8.0	36	-8.9	3.1	0.0	11.9	12.2	31	31	31	31	31	31			
0.1	-	1.1	1.1	1.1	2.2	1.1	6.6	5.0	7.5	3.3	11.1	25	12.6	11.1	11.1	11.1	36	14.0	26	14.0	8.0	36	-8.9	3.1	0.0	11.9	12.2	31	31	31	31	31	31			
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			
4.2	3.0	-2.8	0.8	14.7	0.5	6.8	9.4	17.6	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6	-5.9	0.2	0.9	7.2	7.0	7.0	0.2	0.9	0.2	0.9	7.2	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
0.1	4.2	3.0	3.7	2.4	0.5	7.3	7.0	6.5	12.4	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	7.3	7.0	6.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
1.6	6.1	4.8	-6.8	2.9	1.1	4.1	3.6</td																													

TABLE III : STRUCTURAL CHANGES IN UNIVERSITY TYPE TEACHING STAFF BY STATUS, FIELD
 TABLEAU III : MODIFICATIONS STRUCTURELLES DU CORPS ENSEIGNANT UNIVERSITAIRE

	Total			Pure Science Sciences Pures			Architecture			Technology Technologie			Medical Science Sciences Médicales			Agriculture		
	S.L. S.S.	M.L. S.M.	J.L. S.I.	S.L. S.S.	M.L. S.M.	J.L. S.I.	S.L. S.S.	M.L. S.M.	J.L. S.I.	S.L. S.S.	M.L. S.M.	J.L. S.I.	S.L. S.S.	M.L. S.M.	J.L. S.I.	S.L. S.S.	M.L. S.M.	J.L. S.I.
ALLEMAGNE / GERMANY (b)	24.0	36.9	39.1	23.7	38.4	37.9	32.1	26.6	41.3	22.7	30.2	47.1	12.1	28.2	59.7	25.3	32.3	41.2
1960	20.4	39.3	40.3	20.6	39.0	40.4	28.0	24.2	47.8	19.3	35.6	45.1	9.4	36.4	54.2	22.0	35.7	37.1
1966	17.6	31.3	51.1	16.4	33.5	50.1	20.1	27.6	52.3	15.9	25.6	58.5	8.4	33.3	56.3	16.6	35.2	48.0
AUTRICHE / AUSTRIA	17.8	58.9	23.3	18.9	50.3	30.8	21.0	52.2	26.8	24.8	49.7	25.5	11.7	43.6	44.7	19.9	55.1	25.0
1955	19.1	43.5	37.4							16.7 (c)	34.8 (c)	48.5 (c)	10.6	28.3	63.1	24.0	37.2	38.1
1960	14.4	42.3	40.3							15.0 (c)	34.7 (c)	50.3 (c)				17.4	42.5	40.1
1965	12.3	43.0	44.7	13.9	25.2	50.9	14.9	27.7	57.4	13.9	23.1	63.0	6.0	28.4	65.8	16.2	41.5	42.5
BELGIQUE / BELGIUM	41.9	35.8	22.															
1953	40.2	34.2	25.6															
1960	32.3	32.3	35.4															
1965	27.6	32.7	39.7															
CANADA	16.8	39.6	43.5															
1960	14.8	46.2	39.1															
1965	15.3	63.9	20.9															
DANEMARK / DENMARK (e)	28.3	23.2	48.5															
1955	25.1	19.8	55.1															
1960	19.3	7.3	73.1															
1965	10.7	6.3	83.0															
ESPAGNE / SPAIN (f)	20.6	22.8	56.6															
1955	20.1	26.3	53.6	15.5	32.1	52.4	47.9	7.0	45.1	39.8	20.0	35.7	16.6	30.4	53.0	23.2	25.3	51.1
1959	17.4	28.2	54.3	15.8	37.7	48.3	30.3	27.5	42.2	25.3	25.1	48.4	12.8	24.9	62.3	17.9	38.1	44.0
1960	27.1	46.4	46.5	19.7	43.9	36.4	18.2	43.2	38.3	26.5	34.5	39.0	32.4	61.6	2.0	23.5	52.6	23.0
1964	21.0	35.9	43.1	21.1	37.2	41.7	8.3	28.7	63.0	13.5	26.1	60.4	29.4	54.2	16.4	20.6	34.1	45.2
ETATS-UNIS / UNITED STATES (g)	76.87	73.27	714.27															
1955	765.37	715.07	725.07															
FRANCE	28.2	25.9	44.9	11.9	31.2	56.9												
1957	21.6	23.6	54.6	16.2	21.7	52.1												
1960	21.1	18.5	70.2	10.8	16.6	70.6												
1965	11.1	18.5	70.2	7.0	13.4	79.6												
GRECE / GREECE	66.4	33.6		77.3	22.7													
1960	63.0	37.0		70.0	30.0													
1965	51.2	45.6		59.3	40.7													
IRLANDE / IRELAND	34.2		65.8															
1950	29.4		70.6															
1955	25.3		74.7															
1960	20.5		79.4															
ITALIE / ITALY (i)	12.2	17.7	70.1	12.0	32.9	56.1	6.4	35.0	58.6	12.3	20.7	67.0	7.5	6.8	53.7	14.1	28.7	57.1
1955	10.1	19.6	74.0	10.8	29.8	59.4	6.9	30.4	62.7	10.4	19.9	63.7	5.0	5.2	58.4	12.0	27.0	61.1
1960	7.8	16.8	72.1	8.3	33.0	58.3	1.7	22.2	73.1	7.0	20.6	72.1	4.7	5.8	58.5	11.3	24.9	63.0
1965	8.4	19.4	76.2	7.7	27.9	64.4	3.9	12.2	83.9	6.8	20.1	73.1	5.3	5.4	56.6	11.1	19.5	59.0
JAPON / JAPAN	10.8	57.1	12.7															
1950	20.07	75.67	11.47															
1955	21.9	31.0	27.1															
1960	21.67	74.67	23.57															
1965	22.1	32.3	23.5															
NORVEGE / NORWAY	30.6	12.5	56.9	25.9	7.3	66.8												
1950	25.5	8.9	65.6	17.2	7.0	74.9												
1965	19.1	9.9	71.0	12.9	6.9	80.2												
PAYS-BAS / NETHERLANDS ¹	67.6	32.4		59.6	40.4													
1950	63.7	36.3		59.3	40.7													
1955	63.2	34.6		61.6	36.4													
IRLANDE DU NORD / NORTHERN IRELAND	17.6	44.7	37.7	14.3	33.9	51.8												
1955	15.7	49.7	24.0	12.8	45.6	34.2												
1960	15.2	60.8	24.0	11.1	32.2	46.7												
1965	12.8	62.5	24.7	10.0	63.8	26.2												
SUEDE / SWEDEN (g)	42.8	14.1	43.1															
1965	47.1	52.9		(m)														
SWISSE / SWITZERLAND ¹	57.1	42.9		60.2	39.8													
1955	55.3	44.7		63.1	41.9													
1960	55.1	44.9		57.5	42.2													
1965	54.2	45.8		56.0	41.4													
YUGOSLAVIE / YUGOSLAVIA	47.1	52.9		47.7	52.3													
1950	45.4	44.6		43.2	56.8													
1955	41.7	48.7		45.0	55.0													
1960	40.7	59.1		45.0	55.0													
1965	50.5	39.5		50.8	49.2													

Notes : (a) See notes on Table I / Voir notes du Tableau I.
 (b) For this year, West-Berlin is not included except in the total / Pour cette année, Berlin-Ouest n'est pas inclus dans le total.
 (c) Includes Technology, Pure Sciences and Architecture / Comprend Technologie, Sciences Pures et Architecture.
 (d) Includes Humanities, Medical Sciences and Law / Comprend Lettres, Sciences Médicales et Droit / Comprend les Lettres, Sciences Médicales et Droit.
 (e) See note "i" on Table I / Voir note "i" du Tableau I.
 (f) See notes "k" and "l" on Table I / Voir notes "k" et "l" du Tableau I.
 (g) Concerns all higher education / Concerne l'ensemble de l'enseignement supérieur.
 (h) See notes "n" and "o" on Table I / Voir notes "n" et "o" du Tableau I.
 (i) For Italy, all higher education is considered to be university type considérée comme universitaire.
 (j) 1958.
 (k) 1959.
 (l) Included in Humanities / Compris dans Lettres.
 (m) See notes "I", "J" and "K" on Table I / Voir notes "I", "J" et "K" du Tableau I.

TUS, FIELD OF SPECIALISATION AND COUNTRY BETWEEN 1950 AND 1965 (a)
RSITAIRE ENTRE 1950 et 1965 PAR PAYS, BRANCHE ET STATUT (a)

Percentages : total university type teaching staff = 100 %
Pourcentages: total du corps enseignant universitaire = 100 %

al / Pour cette année Berlin-Ouest n'est pas inclus, sauf dans le total.

Technologie, Sciences pures et Architecture.
Lettres, Sciences médicales et Droit.

LETTERS, SCIENCES MÉDICALES ET DROIT

Tableau I.
Mégnement supérieur.

Tableau I.
Les types higher educe

type higher education / Pour l'Italie, tout l'enseignement supérieur est

et "E" du Tableau I.